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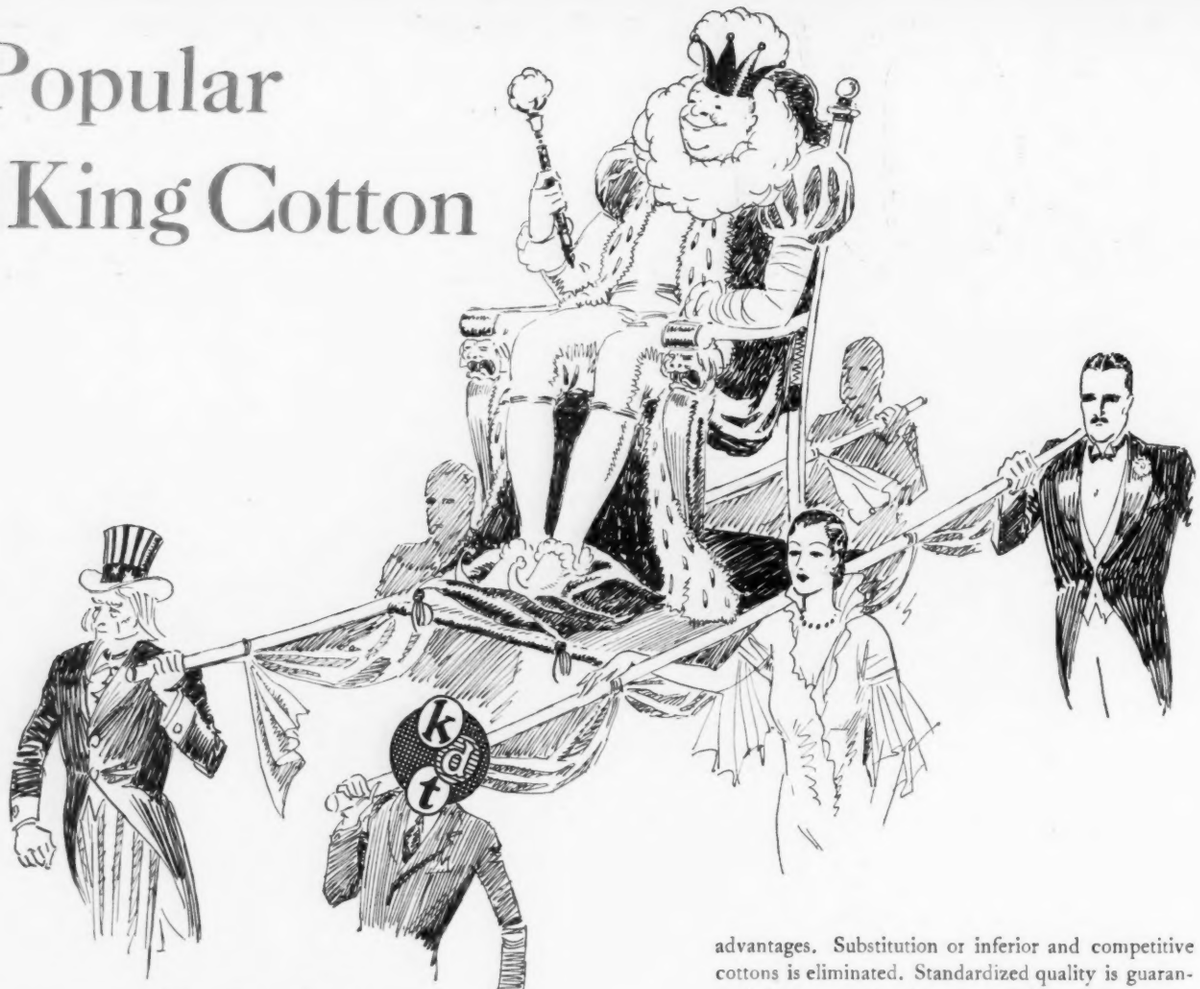


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July, 1931

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COTTON

Vol. 95 July, 1931 No. 9

# The Importance of Cotton Regain and Its Control

By H. H. Willis, Director,
Textile Department, Clemson College.
(All Rights Reserved)

A VALUABLE contribution to the available literature on this important subject. Mr. Willis defines the difference between "regain" and "per cent of moisture"; and reports what extensive tests have proven to be the most satisfactory practices as to humidity in various mill departments. He stresses the importance of automatic control. He then presents data and graphs on regain of raw stock, yarns and fabrics, as determined in the testing laboratory.

◆ ◆

IN THESE LAST few years every department of the cotton mill has been scrutinized with a view to detecting possible sources of preventable loss. Mill conditions and practices never before questioned are now subjected to searching inquiry. The importance of technical scientific control of all manufacturing processes is becoming more and more generally accepted. In this connection the subject of regain, as related to profit and loss, is receiving serious consideration. Unquestionably the control of regain through adequate humidifying units properly controlled not only results in an actual saving of a large sum of money yearly, but also is responsible for a uniform product upon which, to a large extent, the mill's reputation for first-class work depends.

Mr. Willis.

### "Regain" and "Per Cent of Moisture" Not the Same.

The terms "regain" and "per cent of moisture" as applied to cotton are frequently used interchangeably. This use is erroneous, however, since per cent of regain is calculated on the basis of the bone dry weight of the cotton whereas the per cent of moisture is calculated on the wet or conditioned weight before drying. Therefore, the per cent of regain of a sample of cotton is necessarily greater than the per cent of moisture of the same sample. To illustrate: Take a sample of yarn which weighs 1160 grains. If its weight, when dried, is 1081 grains, we have $\frac{1160-1081\times100}{1081}$ = 7.31 per cent regain; whereas $\frac{1160-1081\times100}{1160}$ = 6.81 per cent moisture. It will be noted that the only difference is in the divisor, dry weight being used in calculating regain and conditioned weight in calculating per cent of moisture.

Regain is dependent not only upon the temperature and relative humidity under which cotton is processed, but also upon the variety of the cotton used. Of these three factors, relative humidity is most significant. Humidity and the resultant regain are so important that the manufacturer can not afford to disregard them. If the humidity is not sufficient during a particular manufacturing process, regain is low and the plant may suffer a financial loss in that it uses an excessive amount of raw material. The proper humidity results in smoother processing and a far more uniform product.

There are two main ways by which the manufacturer can obtain the desired humidity upon which regain depends. One method is that of air conditioning by means of a centrally located apparatus, in which case air is drawn into a conditioning unit, is supplied with the desired amount of moisture, heated to a desired temperature and then delivered to the departments by means of distributing ducts. The second method, which is more commonly used, is that of local distribution of moisture through humidifying units of the spray type.

The best of humidifying units is at a disadvantage unless equipped with an automatic control, by means of which moisture is turned on or off as the humidity fluctuates from the standard set. In case humidity is not automatically controlled, regain indicators are indispensable in insuring uniformity of product. The regain indicator serves a most important function in that it indicates the amount of moisture present in the cotton at a given process and thus enables the operative to maintain uniform proportions as between dry cotton and moisture. For instance, suppose a picker lap when doffed is apparently two per cent above standard. This excess weight may be due to either one of two causes: too high humidity or the feeding of too much dry cotton per lap. A glance at the re-

gain indicator determines which is the case; guesswork is eliminated. A very valuable auxiliary piece of equipment is an automatic recording device for relative humidity. It consists of an 8-day clock and a fan which circulates the air over wet and dry bulb thermometers. This instrument not only serves warning if the humidity control fails to work properly, but also furnishes a continuous permanent record of humidity conditions.

In the many tests which the writer has conducted[1], the following humidity conditions were found to be satisfactory: 45 to 50 per cent relative humidity in the picker room, 55 to 60 in the card room and 65 to 70 in the spinning room. Such relative humidities are fairly well adapted to the average mill conditions for South Carolina in that, taken as a whole, the natural relative humidity for the year in that state averages no more than approximately 50 per cent. Thus, under such natural conditions, an excess of humidity seldom occurs and dehumidifying equipment is not necessary. This fact is significant in that it is much easier and cheaper to humidify than to dehumidify. Any good humidifying system, properly controlled, will maintain the desired relative humidity with fair accuracy within a reasonable range.

### Humidity in the Picker Room.

There seems to be a difference of opinion as to whether it is advantageous to use humidifying equipment in the picker room, some mills using it, others not. Those who do not advocate its use claim that cotton can be cleaned better without humidity than with it. In my experience no particular trouble has been encountered in cleaning cotton using approximately 50 per cent relative humidity in the picker room. This degree of humidity reduces the amount of fly and short fiber lost in processing.

One of the main advantages in using humidity in the opening and picking room is that it serves to control to some extent loss in moisture, and more uniform weights of laps can thus be obtained. Unless one has made a number of checks on the natural humidity in the picker room at different times of the day, he may be surprised to know that the humidity of the room may vary from probably 55 in the morning to as low as 35 in the afternoon of the same day, in which case, considerable variation will be found in the actual weights of the laps unless the mill has regain indicators and is using a given amount of dry cotton per lap.

As an illustration: Assuming that the mill is not equipped with regain indicators, suppose the temperature in the morning is 75 and the relative humidity is 54 per cent. Under these conditions the amount of regain in the cotton would be approximately 7 per cent. Assume that the relative humidity of the picker room in the afternoon of the same day fell as low as 35 per cent relative humidity, a not unusual occurrence during certain months of the year. The regain of the cotton would then be approximately 5 per cent. This would give a difference of 2 per cent in the regain in the picker lap as between morning and afternoon.

What is the practical significance of this situation? It means that the production of a standard weight lap in the afternoon would actually require more dry cotton than was used for a similar lap in the morning. Suppose the mill is making a standard 50-pound lap. Under the conditions cited, the lap made in the morning would contain 46.73 pounds of cotton and 3.27 pounds of moisture, whereas the one made in the afternoon would contain 47.62 pounds of cotton and 2.38 pounds of moisture, a difference of .89 pounds of dry cotton per lap. If the mill is using as much as 10,000 pounds of cotton per day, the afternoon run of some 5,000 pounds would contain approximately 89 pounds of excess cotton fiber in place of moisture. Thus the mill may not only waste raw material but it lays the foundation for irregular yarn numbers.

This lack of uniformity in the weights of laps necessarily will be reflected in the weights of card and drawing sliver and roving, and irregular yarn numbers will result unless an attempt is made to take care of such variation by means of changing gears. Gear changing, of course, is a costly procedure in that it involves not only extra labor but also machine stoppage. Moreover, changing gears may not necessarily improve the situation. To illustrate: An operative in the card room finds the card sliver running light. He may assume that an insufficient amount of cotton is being fed and changes the draft gear accordingly. If his assumption is correct, this gear change will remedy the condition. Suppose, however, that low regain is responsible for the sliver falling below standard weight. Change of gear under those circumstances means that excess dry cotton is making up weight which moisture should supply. In that case how is the subsequent process affected? As the cotton absorbs moisture and assumes normal regain under the higher humidity in the spinning room, the yarns will prove too heavy. If this heavy yarn happens to pass through the spinning department between the regular intervals for making sizings and thus is not detected, the cloth will contain more dry cotton per yard than necessary. If, on the other hand, the heavy yarn is detected, gear changes in spinning are made to correct it. Under the first condition the mill loses the excess dry cotton and its product is irregular, under the second, labor cost is increased and production is slowed down.

### Humidity in the Card Room.

The proper amount of relative humidity in the card room, approximately 60 per cent, aids in producing a much more uniform product, serves to reduce the static electricity, to some extent minimizes the amount of dust around the cards, and in general makes the work run better.

For a number of years the writer has used one of the later makes of humidifiers with automatic controls. An independent recorder indicates that the average humidity over a period of several days was usually within one per cent above or below the standard for which the control was set. The hourly readings indicate a variation of only about 1.5 degrees above or below the standard. Of course, in a large plant the

(1) While in charge of the spinning project of the U. S. Department of Agriculture, the writer conducted some 600 spinning tests on various grades, staples and varieties of cottons, subjected to various cultural, weather, harvesting and ginning conditions.

variation will be greater in portions of the room because of variation in temperature caused by heat thrown off by machines and motors. In some cases this variation may run from 8 to 14 per cent above or below the standard or average of the room conditions. This variation may be largely overcome by proper circulation of the air in the room.

### Humidity in the Spinning Room.

A relative humidity of 70 in the spinning room is very satisfactory. However, when the temperature during the summer months gets too high for the comfort of the operatives, the relative humidity may be reduced to 60 per cent without appreciable loss of efficiency. It is a mistaken idea that it is desirable to run both a high humidity and a high temperature. As an illustration: 60 relative humidity at 71 degrees has 4.9 grains of moisture per cubic foot, whereas 60 relative humidity at 85 has approximately 7.6 grains per cubic foot, a difference of 2.7 grains per cubic foot. Cotton, however, takes up practically the same amount of regain under either condition, namely, from 6.5 to 7.5 per cent depending upon the character of the cotton. Thus, except in the summer months, it is entirely possible to maintain the lower temperature conducive to the comfort of the operatives without sacrifice of spinning efficiency.

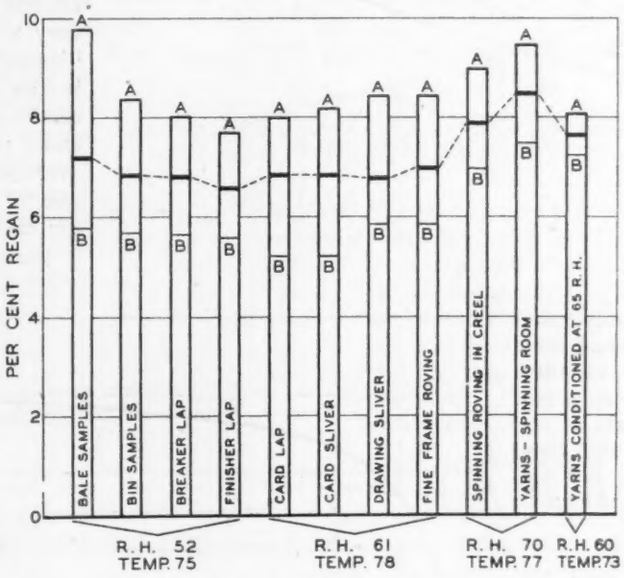



FIG. 1

**Showing: Average per cent of regain and extreme points of regain of representative samples by relative humidity, by temperature and by stage of processing. Note that these data was recorded under conditions similar to those found in an average mill. . . . . .**

### Moisture Samples.

The writer while in charge of the cotton spinning work for the U. S. Department of Agriculture took some eight to ten thousand moisture samples under the humidities recommended above for the respective rooms of a cotton mill. From these samples percentages of regain were determined. Some of these data on regain are presented in various government publications, several of which are listed below(2). These data indicate that the regain in raw stock depends not only upon temperature and relative humidity but also upon the variety of cotton and the conditions under which the cotton was stored prior to its receipt in the mill. It is entirely possible that some of the cottons as received at the mill may contain from 6 to 12 per cent regain. However, if the cotton has been stored in average conditions for a sufficient length of time, this regain will probably run from 7 to 8 per cent. An analysis of these data further indicated that under the relative humidities and at the temperatures recommended, cotton at the respective stages of processing showed approximately the following average regains, individual cases, of course, falling above and below these averages. See Figure 1.

Since most of the cotton used in these tests upon which the data in Figure 1 are based had been stored for a long period and under good conditions, the average per cent of regain for the bale samples may be somewhat lower than would commonly be found in the average mill. Note that the yarns from the spinning took up more regain than did the same cottons in the form of roving in the creel.

In the case of yarns, the numbers and amount of twist inserted influence regain to a slight degree. It will be noted that the regain of these samples, based on average mill conditions, is considerably lower than the regain shown in Hartshorne's table for cotton regain. See Figure 2. Walen, in his study of 1921, found that the percentages of regain of samples of yarn taken from various mills ranged from 1 to 2 per cent less than those of Hartshorne's table.

### Laboratory Tests of Regain.

Regain is an extremely important factor in testing yarns and fabrics because of its effect upon weight, count, stretch and strength. For this reason it is imperative that proper methods of testing be used. A test is without value unless conducted with precision under properly controlled conditions.

The writer has recently conducted further preliminary tests on regain in raw cotton in the Clemson College textile testing laboratory which is equipped with both humidifying and dehumidifying units. These samples, weighing approximately 600 grains each, were tested at a constant temperature of 74 degrees at a relative humidity of 56, 60, 70, 79, and 87, re-

(2) Utilization of Pima Cotton, U. S. D. A. Bulletin No. 1184, Nov. 1923.
Manufacturing Tests of Cotton of the White Grades of the Universal Standards for American Cotton—Dept. Bulletin No. 1488, April 1927—Crop of 1924.
Spinning Test of Some Texas Grown Varieties of Cotton (Crops of 1923-24-25) May 1928.
Spinning Tests of Picked and Snapped Cottons (Texas and Oklahoma) Crop 1925—Sept. 1926.
Spinning Test of Leading Varieties of S. C. Cottons—Crop of 1925. Dec. 1926.
Spinning Test of Acala Cottons Grown in New Mexico—Crop 1926. Mar. 1928.
Spinning Tests of Acala and Pima Cotton, San Joaquin Valley, California—Crop 1924. Oct. 1925.
Spinning Tests of Leading Varieties of N. C. Cottons, Dec. 1926. Crop 1925.

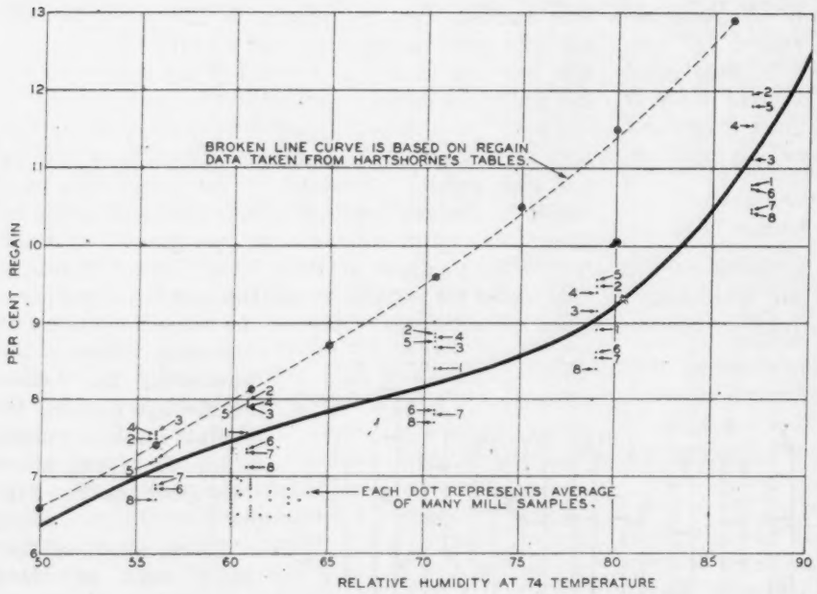

BROKEN LINE CURVE IS BASED ON REGAIN DATA TAKEN FROM HARTSHORNE'S TABLES.
EACH DOT REPRESENTS AVERAGE OF MANY MILL SAMPLES.
PER CENT REGAIN
RELATIVE HUMIDITY AT 74 TEMPERATURE

FIG. 2

**Fig. 2. Rough curve representing the per cent of regain of individual samples of cotton of different varieties conditioned under given relative humidities. See Fig. 4 for rate of regain of these same samples after they had been dried 4 hours at 220 degrees F., exposed and re-conditioned.**

spectively, after having been exposed in the laboratory at the same time and for the same length of time, 4 hours. See Figure 2. This figures indicates the variation in regain among samples of cottons of different varieties. Each numbered dot represents the reading for a particular sample under controlled laboratory conditions. The rough curve is inserted for the convenience of the reader. Each dot of the unnumbered group of dots represents the average regain of many samples of different varieties of cotton under average mill conditions.

These results indicate that variety is an influential factor in regain of cotton. As an illustration, in Figure 2, cottons Nos. 2 and 7 represent different varieties and staples grown in the same district. It will be noted that under the respective humidities the two varieties differ in regain from .6 to 1.5 per cent. This may explain the fact that mills often find it necessary to change the amount of humidity of the respective manufacturing departments when changing from one variety of cotton to another variety, in order to prevent the cotton from sticking or lapping-up in the drawing or spinning operations. These differences in regain as among varieties are greater at the higher humidities.

It is rather interesting to note how uniformly these samples kept their relative respective positions as the humidity was changed from the low point to the high point. Similar uniformity was observable in the tests of many other samples as well. Such results bear witness to the accuracy and efficiency of the humidifying and dehumidifying equipment used and the extreme care of the tester.

It is not possible to obtain accurate results under ordinary laboratory or mill conditions, because regain under those conditions is influenced by the presence of air pockets in which the humidity may vary several degrees. This fact is illustrated in Figure 2. Each dot in the section between 60 and 65 relative humidity and between 6 and 7 per cent regain indicates the average regain based on many samples of different varieties of cotton taken under conditions similar to those found in many commercial

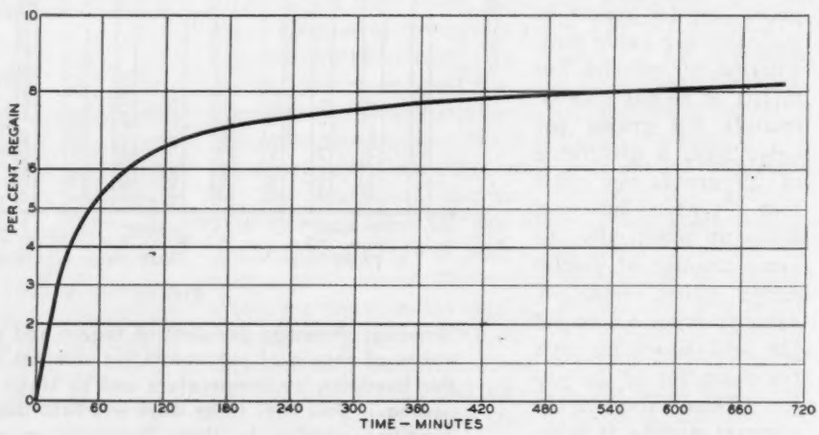



FIG. 4

**Fig. 4. Rough curve representing the rate of regain of samples of bone-dry cotton under 70 per cent relative humidity at 73 degrees temperature. These same samples were used in Fig. 2 . . . . . .**

plants. These results are lower than those found in the well controlled laboratory and are in line with those found by Walen as reported on page 220 of *"Air Conditioning in Textile Mills"* by Parks-Cramer Company. None of the results of this test for humidities higher than 60 equal those set forth in Hartshorne's tables for cotton regain. See Figure 2. The broken line curve is drawn from data taken from Hartshorne's tables.

Figure 3 illustrates how individual samples of different yarns and fabrics of different weights, both gray and bleached, took up moisture under different humidities. Dots Nos. 17, 18, 19 represent 22s warp yarn made from three different lots of cotton. The last two are of different strains but of the same variety. Note that No. 17 consistently showed much more regain than did Nos. 18 and 19.

Dots 20, 21 and 22 represent gray or unfinished fabrics weighing approximately 1.50 yards, 1.50, and 3.00 yards per pound respectively. The lighter weight fabrics ran slightly higher in regain than did the

heavier weight. Gray fabrics had more regain than gray yarns in most cases.

The gray goods had a higher regain than did bleached goods made from the same general character cotton. No 22 represents gray sheeting whereas Nos. 23 and 24 represents the same goods after bleaching. It will be seen that the regain of the gray fabric is from .9 to 1.6 greater than that of the same goods after bleaching. This difference is greater in the higher humidities.

Under relative humidities of 50, 60, and 70 the spread and amount of regain for yarns and lighter weight fabrics were very similar to those for raw cotton. However, in the higher humidities the spread was greater for yarn and fabrics than for raw cotton, and the regain for fabrics greater than for raw cotton. See Figure 2 for regain of raw cotton.

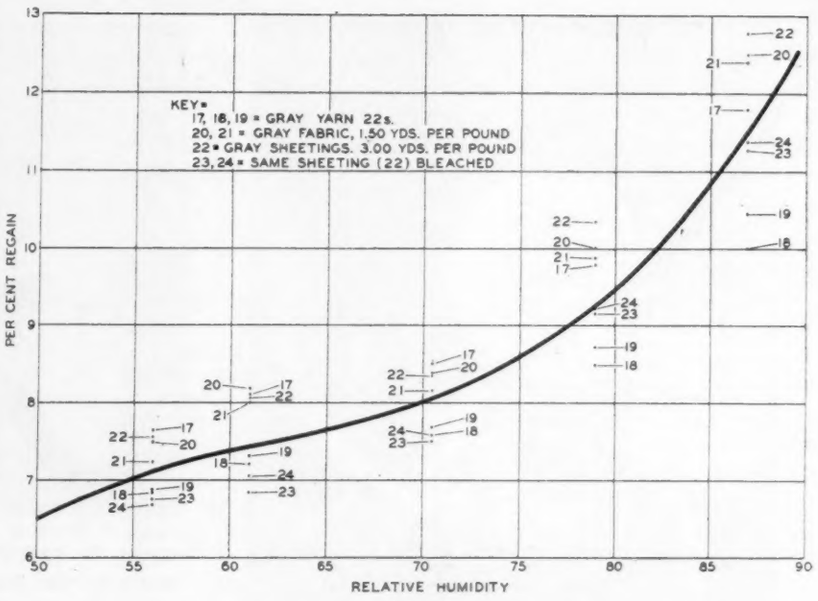

KEY=
17, 18, 19 = GRAY YARN 22s.
20, 21 = GRAY FABRIC, 1.50 YDS. PER POUND
22 = GRAY SHEETINGS. 3.00 YDS. PER POUND
23, 24 = SAME SHEETING (22) BLEACHED
PER CENT REGAIN
RELATIVE HUMIDITY

FIG. 3

**Fig. 3. Rough curve representing the per cent of regain of individual samples of grey yarns and of gray and bleached fabrics under a given humidity. See Fig. 5 for rate of regain of these same samples after they had been dried, exposed and reconditioned.**

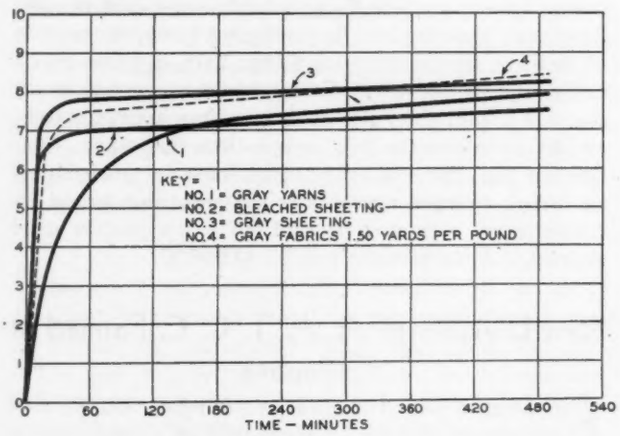



FIG. 5

**Fig. 5. Rough curves representing the rate of regain under 70 per cent relative humidity at 73 degrees temperature of certain yarns and fabrics after they had been bone-dried and re-conditioned. These same yarns and fabrics were used in Fig. 3.**

The same samples of raw cotton used in obtaining the data shown in Figure 2 were dried at 220 degrees F. for about 4 hours, until bone dry, and then placed in the Clemson automatically controlled laboratory. Frequent weighings were made to determine the rate of regain at a given relative humidity of 70 at 73 temperature. The results are shown in Figure 4. It will be noted that the bone dry cotton picks up regain very rapidly for the first 30 minutes, on an average about 4 per cent. The rate then decreases in the second 30 minute period to about an additional 1.3 per cent. This rate of regain continues to decrease up to about the 4 hour period after which time regain is very slight and slow. The data indicate that the rate of regain depends to a large extent upon the variety of cotton. At the first 30 minute period there is a spread of approximately .8 per cent regain.

There are varieties of cotton which, after being conditioned and dried, either will not take up, under the same conditions, as much moisture as they did before being dried out or they are very slow in so doing. Apparently heating affects either the physical or the chemical structure of the fiber. The fabrics of this test after being bleached did not take up as much moisture as before they were bleached. Figure 5 represents the rate of regain of certain yarns and fabrics after having been bone dried and reconditioned.

The yarns of this test, after being dried, took up moisture at about the same rate as did the dried cotton, whereas the dried fabric took up moisture much more rapidly than either the dried cotton or dried yarns. As an illustration, the samples of dried cotton and yarn took up, under 70 relative humidity, about 4 per cent regain in the first 30 minutes, and about 5.5 per cent during the first hour whereas dried gray cloth of 100x50 weighing 1.50 yards per pound took up about 2.5 per cent regain in the first 5 minutes and from 5.5 to 6 per cent in the first fifteen minutes. See Figure 5. In individual cases gray sheetings 64x64 made of 28s to 30s yarn, took up regain at the rate of 4.8 per cent in the first five minutes and 7 per cent in the first 10 minutes. The same sheeting after bleaching took up regain at about the same rate until it passed 6 per cent, after which point the rate was slower and the amount less than that for the gray, obtaining practically its limit in about 50 minutes. See Figure 5. These data are as yet preliminary and not to be regarded as conclusive until confirmed by further tests.

### Regain in the Testing Room.

In making strength and size tests of either yarns or fabrics it is most important to know the amount of

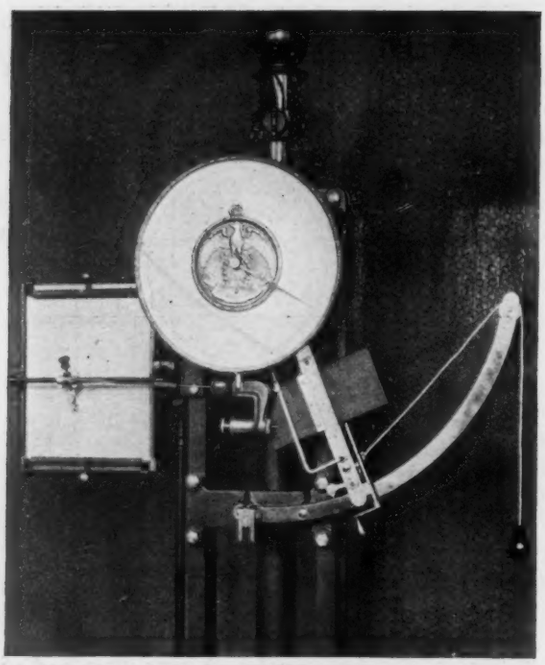


**Fig. 6. Sketch of Scott yarn tester with calculating attachment for direct dial readings in terms of computed tensile strength, such device being based on 7 per cent as the standard regain set forth by the American Society for Testing Materials. . . .**

This correction device, attached below and to the right of the dial, is used in conjunction with the regain indicator shown in Fig. 7. For instance, if the regain indicator shows that the yarn under test has 8 per cent regain, the indicator on the lever arm of the skein tester is set at 8 and the corrected yarn strength may be read on the dial. Strength and elongation may be recorded on the chart at the left of the dial. . .

regain in each sample tested. As an illustration: Assume that yarn having 6 per cent regain breaks at approximately 85.5 pounds; the same yarn with 8 per cent regain will break at approximately 91.8 pounds. Thus if strength and size tests are made without determining the actual regain of the samples tested, the results obtained are not dependable. By use of some of the latest testing equipment now on the market, regain can be determined very easily and necessary corrections be made for differences. Figure 6 shows a late model Scott skein tester with calculating attachment for direct dial readings in terms of computed tensile strength. This is used in conjunction with the regain indicator shown in Figure 7. As an illustration of its use: Suppose the regain indicator shows that the yarn under test has 8 per cent regain and 7 per cent regain is the standard for the particular test; the indicator on the lever arm of the skein tester is then placed at 8 and a corrected and direct reading is given on its dial.

In conclusion, control of regain in cotton should be given much greater consideration by our mills in that proper regain increases production, reduces labor cost, facilitates processing, lessens invisible loss in the picker room, produces more uniform weights of yarns and fabrics, and prevents the use of more raw stock than necessary. Furthermore, the influence of more favorable working conditions as to temperature and humidity on the morale of the operatives can not be measured in dollars and cents. It is my opinion that an expert in humidity can save an average sized mill yearly several times the amount of his salary. I have tested a number of fabrics in which the regain was approximately 6 per cent. In those particular fabrics the mill could well use 7 or probably 8 per cent regain. Assuming that the mill is producing 3,000,000 pounds of finished goods yearly and that half of these goods carry only 6 per cent regain, when the goods could carry 7.5 per cent, the mill is using approximately 19,745 pounds more dry cotton than necessary. Assuming that the cost of the raw material plus manufacturing charges amounts to 25 cents per pound—a conservative estimate—the 19,745 extra pounds used represent a preventable loss of $4,936.25.

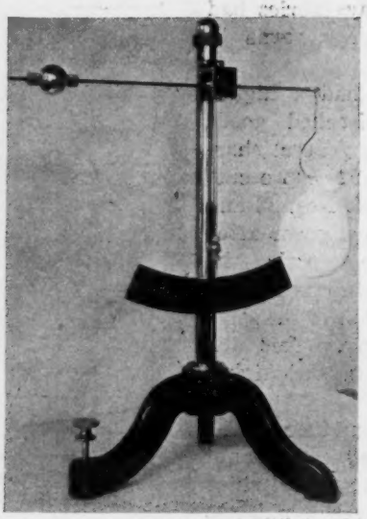


**Fig. 7. Sketch of Scott regain indicator used in conjunction with yarn tester shown in Fig. 6 . .**

For instance, if the regain indicator shows that the yarn has 6 per regain, the indicator on the lever arm of the tester is set at 6 and the corrected reading is given on the dial of the tester. This corrected reading is based on the 7 per cent standard for regain as set forth by the American Society for Testing Materials . .

## New Division of A. A. T. C. C. Formed at Columbus

FOLLOWING two preliminary meetings of textile men interested, definite organization of a new section of the American Association of Textile Chemists and Colorists was effected at a meeting held in Columbus, Ga., on Saturday evening, June 20th.

The men making up the new section had considered previously operating as a self-contained unit, but the report of a committee recommending affiliation with the American Association was unanimously accepted, and the new division will be known as the Southeastern section and will function as a part of the national organization.

A paper on sulphur colors was read at the meeting by E. P. Davison, of E. I. duPont deNemours & Co. J. C. Robertson, of R. & H. Chemical Co., W. C. Querm, of Buffalo Electro Chemical Co,, and J. W. Ivey, of the Mathieson Alkali Works, spoke on various forms of bleaching

E. A. Feimster, assistant superintendent, Eagle & Phenix Mills, Columbus, was elected chairman of the section. R. A. Field, Jr., of Newnan, is treasurer, and C. B. Ordway, of Auburn, secretary. M. T. Johnson, of LaGrange, Tom Taylor, of Newnan, C. A. Jones, of Atlanta, W. C. Jackson, of Griffin, George I. Purvis, of Columbus, and L. C. Christman, of Alexander City, Ala., were elected as members of the executive committee. About fifty men were present at the organization meeting.

# Uses and Advantages of Anti-Friction Bearings on Textile Machinery

Part Two

**THE FIRST part of this article, appearing last month, discussed the subject of anti-friction bearings on textile machinery, generally. The present section describes briefly the various types of bearings generally used on this equipment, and how they are applied, and continues a discussion of the advantages of these bearings in major applications on textile equipment.**

**Copies of the preceding installment will be furnished to those requesting them . . . . . .**

WHERE MACHINERY is bought with anti-friction bearings as part of the equipment, the purchaser is not interested in what type or style of bearing has been used, but if an old machine is to be equipped, the owner of the machine must make his own decision as to what he wishes to do about it. A little general information about the various types of such bearings may help in deciding what to do.

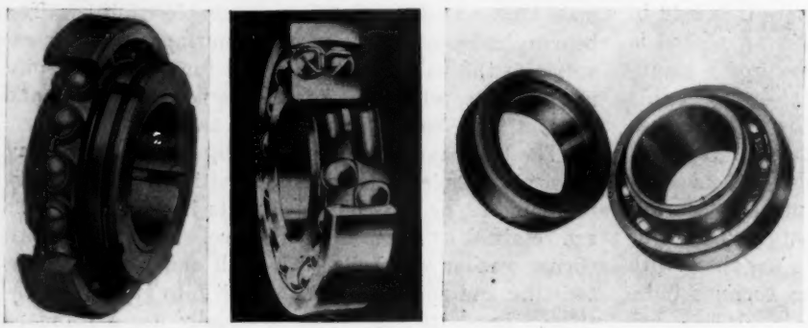
There are two general classes of anti-friction bearings; ball bearings, and roller bearings, but there are a number of different types of each class. A ball bearing is usually made in a self-contained unit, capable of operating alone, and taking a reasonable amount of thrust, as well as radial load. Roller bearings, where straight rollers are used, will take no thrust load, and if taper rollers are used, two bearings opposing each other must be used in a mounting.

### Different Types of Bearings.

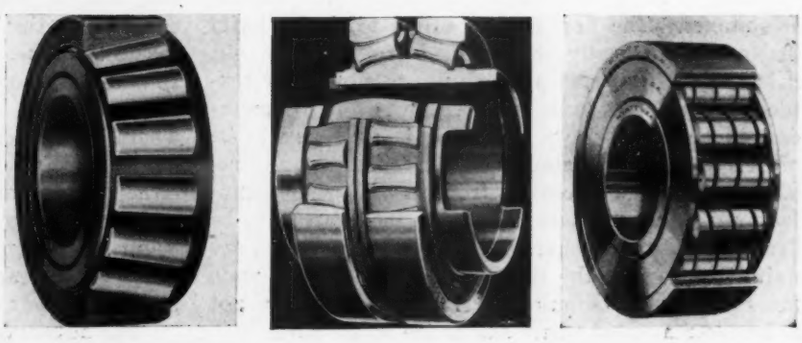
Both ball and roller bearings are divided into various classifications, as radial, thrust, radio-thrust, etc. All radial ball bearings will take some thrust load, and can be used as independent units. Ball thrust bearings will take no radial load, while radio-thrust ball bearings will take both radial and thrust loads. Straight-roller type bearings are suitable for pure radial loads only, while taper-roller types are nearly always of the radio-thrust variety, although they can be made to take so large a proportion of thrust load as to have almost no radial capacity.

The cotton mill man can therefore confine his selection to the type and make of bearing he will use in nearly every case where he decides on anti-friction bearings to apply to an old machine. All makers of high grade ball bearings make what are known as "standard sizes." These sizes are standardized the world over, and all such bearings, no matter where made, or by whom, are interchangeable. It is therefore highly advisable to use standard bearings wherever possible, for while a special bearing may appear to be slightly better in some particular case than a standard one, it usually costs more.

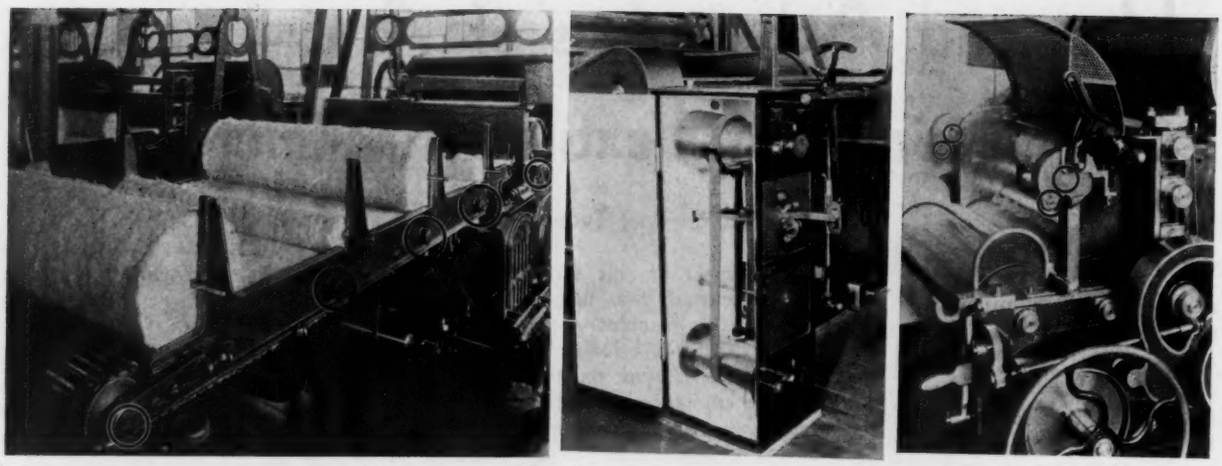
Standard radial ball bearings may be either rigid, or self-aligning. The vast majority of such bearings are not self-aligning, as well-built machinery has no need for self-alignment in a ball bearing. There are, however, many special cases where a self-aligning feature is needed, and it can be obtained by using a self-aligning bearing, a rigid bearing in a self-aligning mounting, or a special bearing in a special mounting.



**At left: From left to right, standard, single-row, deep-grooved ball-bearing, with adapter for clamping to shaft; self-aligning type of ball-bearing; and radial ball bearing with wide inner race and locking collar for fastening to shaft . . . . . .**



**At right: from left to right, roller-bearing of the taper-roller type; duplex self-aligning roller bearing; and roller bearing of the straight-roller type with helical rollers . . . . .**



Ball-bearings on apron and evener rolls of lappers, shown at left and center, take load off the evener, and reduce belt slip. Right, anti-friction bearings in calender racks reduce soft and split laps . .

Since the self-aligning bearing sacrifices some of its strength to obtain the flexible feature, it may sometimes be advisable to use a rigid bearing in an aligning mounting, particularly if the load is considerable and the speed low. Where loads are light, and speeds high, the self-contained self-aligning bearing is usually better, provided self-alignment is needed at all. Where no self-aligning feature is needed, it is generally better to use the rigid type bearing, but where loads are light, it does not matter much what bearing is used. In fact, for very light loads, or for medium loads at very low speeds it is often not necessary to use a standard-high-duty bearing, as one of the various types of stamped steel bearings will answer the purpose.

### Attaching the Bearing to the Shaft.

There are three principal methods of attaching a radial ball bearing to its shaft. One is to turn the shaft down to a shoulder, and press the bearing over the shaft and against this shoulder, where it is held in place by a locknut screwed on the shaft. A second is to grind a tapered hole in the inner race of a standard bearing, and fit a tapered, split sleeve into this hole, so that pressing the bearing on the sleeve causes this to close up and grip the shaft firmly. One end of the sleeve is threaded for a locknut to hold it in the bearing. A third method is to make a bearing with a special, wide inner race that fits snugly over the shaft, and to lock this inner race to the shaft with a locking collar that prevents it from turning independently of the shaft.

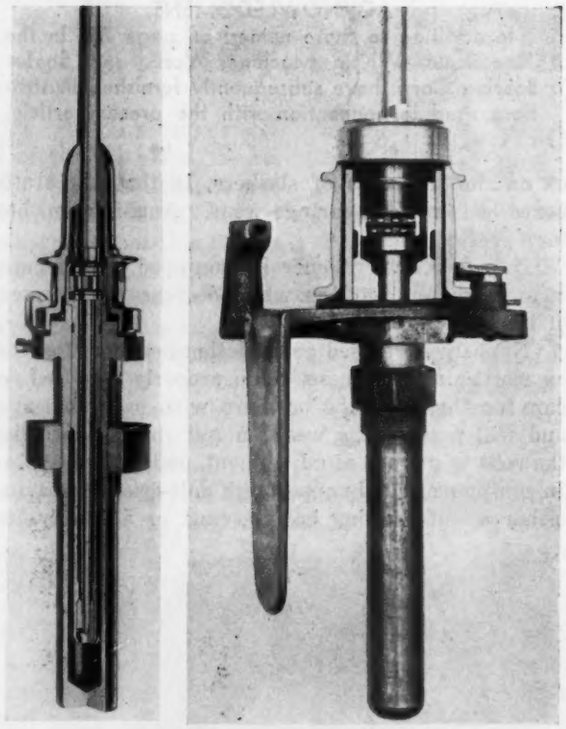
Each of these methods has its merits and its disadvantages. The first is well suited to short shafts that can conveniently be machined to a shoulder, but it is frequently inconvenient to use this on many textile machines. As a choice between the last two methods, the adapter sleeve mounting is generally to be preferred, as it is a standardized proposition, and replacements can be secured from any bearing manufacturer. Also, because it permits the bearing to be firmly locked to the shaft. However, if the shafts are quite true to size, the slip-fit bearings with the wide inner races may be quite satisfactory. They are not to be recommended where shafts are at all worn.

There are two distinct types of ball or roller bearing line shaft boxes; one in which the hanger and the bearing mounting are an integral unit, and one in which the bearing mounting is a separate unit designed to fit in any standard hanger. The first type is particularly suited to new installations, while the second is intended primarily for changing over old jobs, although it is widely used on new work. There are a half dozen different makes of anti-friction boxes for change-overs, all following the same general design. This is in the form of a double ended, or dumbbell cast iron housing with a bearing in each end. This mounting will fit into any standard drop hanger. The method of mounting the bearings in the housing varies with the different makes; some using sttandard, and some special bearings. The bearings may be either ball or roller.

There are several special anti-friction bearings that are incorporated in units completely furnished by the manufacturer. The cheese mounting of a Barber-Colman high speed spooler is an example of this. The bearing is built right into the mounting. Another example is the ball bearing top roll for roving or spinning frames, where the bearing is not a separate and distinct unit, but is a part of the assembly itself.

The ball bearings used in roving spindle steps may be either simple thrust washers with balls to support the spindles, or self-contained units in which the balls are retained by forming a thin steel shell around both thrust washer and balls. The ball and roller bearing twisting and spinning spindles fall into two classifications. Large twister spindles usually use a standard ball bearing which is pressed on the spindle, and mounted in the base under the whorl, or in a bolster inside the base. Small twister spindles, and spinning spindles, on account of the small size of the whorl, offer a problem in anti-friction bearing application. There is not room for a standard bearing, so the spindle itself is made the inner race of the bearing, and either balls or rollers may be used. Ball bearings have not proved very satisfactory for this purpose, on account of the small size of the balls that can be used, but a roller bearing has been developed that seems to answer the purpose admirably.

The advantages of anti-friction bearings on twist-



Left, the roller-bearing spinning spindle; right, the ball-bearing twister spindle—reducing friction, power and lubricant . . . . . .

ing and spinning spindles are: reduction in power consumption, easier starting, less frequent lubrication, higher maintained speeds, and better plumbed and balanced spindles. The last advantage arises from the fact that the spindle is of special steel necessitated by the use of the spindle itself as the seat of the rollers or balls. This steel is highly elastic, and very resistant to permanent distortion, so that it is likely to stay straightened indefinitely. Practical absence of friction in the bearing allows of more uniform speed, and consequently an evener twist in the product. On twister spindles this is of very great importance.

### The Roller-Bearing Spindle.

The obstacle to the wider use of anti-friction spindles is the cost. To a certain degree there may be a feeling against the anti-friction spindle on account of the early failures in its development. However, since the later types have been in use for some time and have apparently been entirely successful, a few more years' experience should show if they will stand up under service, and if their durability is proved, the cost should be the only drawback. This generally precludes the use of such spindles for old frames, but as their use is extended, and the cost of production reduced, they should come into general favor on new machines.

Cotton mill men are familiar with many of the uses of anti-friction bearings that have been mentioned in the preceding article, but there are several possible and desirable applications of such bearings that have not been made to cotton mill machinery. There are also some that have been made here and there by progressive mills, but which have never come into general use. The lapper was the first cotton mill machine to be widely equipped with anti-friction bearings. The beaters and fans on these machines were very generally changed over to ball bearings, until at the present time it is probable that 85 per cent to 90 per cent of all pickers in this country are so equipped.

New pickers first began to come out with ball bearings as stock equipment on beaters and fans about 1920 or 1921. Since that time the picker has come to be almost fully equipped with ball bearings at all important points. It took mills and machinery men about ten years to reach the point where they realized the advantages of the extensive use of ball bearings on pickers, but no one would now wish to go back to the old routine of oiling bearings twice a day, and replacing them occasionally as they wore out.

Slashers have been coming out with roller bearings on cylinders for more than 20 years. Some day the size rolls and the creels will be equipped with anti-friction mountings as a standard proposition. They should

Left, ball-bearing mounting on picker beater, probably the oldest and most familiar application of anti-friction bearings to cotton machinery. Right, picker fan mounted on anti-friction bearings, greased about every three months . . . . . .

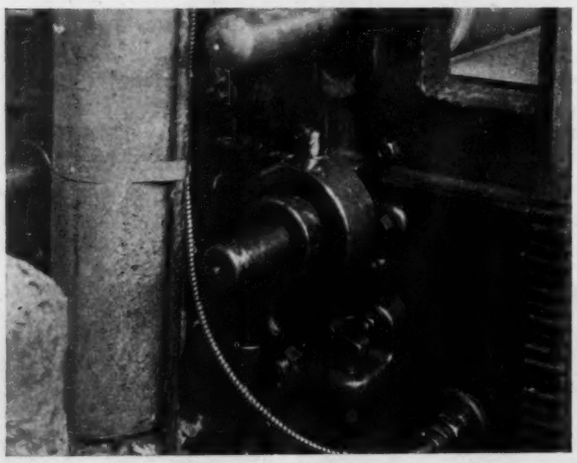
also be used on the measuring roll, and on the fan; as well as in the press roll supporting rollers.

In recent years a number of twisting and spinning frames have had the cylinders mounted on ball bearings. This is an application that will seldom pay on an old frame, on account of the cost of installation, but which should be standard on all new frames. It costs very little more in making a new frame to put on the ball bearings, and when the demand is insistent enough these will be used, just as they have come to be regularly used on pickers.

Ball or roller bearing top rolls on spinning frames will probably come into more general use in the next few years. The objection to them now is the cost, but on a new frame they can be put on with much less expense than in changing over an old machine. This would be the ideal top roll mounting. The rolls would need lubrication only when they were re-covered, and as saddles and roll necks do not require lubricant with this roller, oil would be kept off the roller covering, and its life greatly prolonged. There is also a great saving in oiling labor and in oil. A further advantage is that each roll is independent of the other.

Where solid rolls are used, it is quite necessary that both bosses, when covered, be exactly the same diam-

eter. A very small difference in diameter will cause quick fluting and destruction of the covering on both bosses. Naturally, if the two bosses are of different diameters, they will try to revolve at different speeds when turning on the fluted lower rolls. This causes the fluted rolls to scuff the leather on the covering, and soon ruins it. Also, if one top roll laps up, its increased diameter makes it try to run slower than its mate, and the covering on the unlapped roll is quickly chewed up. Anti-friction top rolls run independently



**The anti-friction bearing on the size rolls of this slasher will never wear down and let the shafts cut out the stuffing boxes and cause leaks . . .**

of each other, and eliminate these two troubles.

A ball bearing hanger for roving bobbins has been on the market for some time. This eliminates the skewer, and gives an evener tension on the roving. It would seem to be a good thing if it could be produced cheaply enough. The cost of equipping a spinning frame using double roving would be prohibitive, however, unless the mounting could be made very cheaply.

Except for the top rolls, anti-friction bearings were not used on roving frames until lately, when the ball step bearing was introduced. New frames should be equipped with these steps, and also with a well-designed compound mounting using anti-friction bearings. The lubrication of the compound has always been difficult, and a proper anti-friction mounting would run for several months with one lubrication, and the gears would remain properly meshed indefinitely; thus relieving the operating troubles due to worn gears.

Looms have been successfully equipped with anti-friction bearings on camshaft, crankshaft, and rocker shaft. Such bearings require lubrication only once in three to six months, and save a great deal of oil and oiling labor, as well as damage to goods due to oil.

Cloth brushers should have brushes and rolls mounted on anti-friction bearings. The brushes work at high speed, and are exposed to dust, which works into plain bearings and causes excessive wear.

Drying cans have been equipped with anti-friction bearings with most gratifying results. The heat about these cans makes ordinary lubrication difficult, while ball or roller bearings used here will run indefinitely with little attention. The same problem is found here

ACKNOWLEDGMENT

**In addition to those named on page 735 in the June issue, Whitin Machine Works and Shafer Bearing Corp. have subsequently furnished illustrations used in connection with the present article.**

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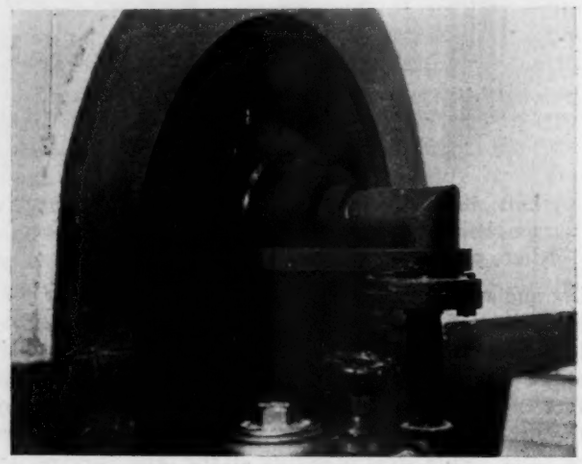
as on the size rolls of slashers, in that the stuffing boxes leak as the bearings wear. Anti-friction bearings prevent this.

Dryers are very generally equipped with numbers of anti-friction bearings, which decrease the frequency of lubrication.

Nappers have used anti-friction bearings for years on worker rolls. These, when properly mounted, will run for three months or more with one lubrication, and will prevent the wear on roll shafts that allows the rolls to get out of adjustment, and make bad work. In equipping an old napper with anti-friction bearings, either a self-aligning ball bearing, or a loosely-fitted



**Slasher cylinders on anti-friction bearings turn easier, and put less strain on warps. The journals never wear or need replacement . . . . .**

rigid bearing should be used. The centrifugal force on the rotating worker rolls causes them to bow out somewhat, so that a small amount of self-alignment is required to take care of it.

The textile industry is really just beginning to realize the advantages of better bearings in its machines. The automotive industry has almost completely abandoned plain bearings at all important points, and the machine tool industry is rapidly adopting anti-friction bearings for many uses. Several well-known makers of lathes use anti-friction bearings in the headstock mounting. Nearly all high grade drill presses use anti-friction bearings liberally; some have no plain bearings at all. Grinders, operating at high speeds, have used ball bearings with great success. Roller bearings are now being used on car wheel mountings by railroads.

So, there is certain to be an extension of the use of anti-friction bearings in the textile industry, and the speed and extent of this will depend on the demand from the users of machinery for more durable, freer running bearings that will require less attention, cause less trouble, consume less power and lubricant, and enable machines to do more and better work.

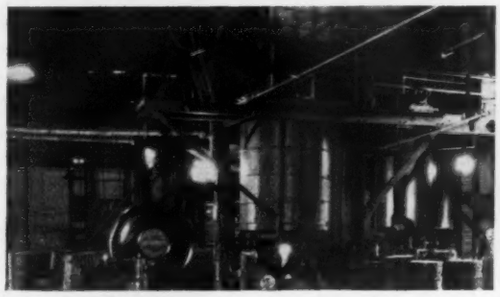
# Turkey Red Oils in Wet Finishing

By Andrew J. Kelly,
Chief Chemist, Burkart-Schier Chemical Co.

**A DISCUSSION largely for the textile chemist and wet finisher on the uses of these products in connection with textile finishing processes. Recent changes in the processes of sulphonation and preparation are discussed, and the dependability and adaptability of the oils for use in the various processes are covered, also some details in connection with the making of penetrants and solvents using these oils. Soluble mineral oils are also discussed . . . . . .**

THE PAST DECADE has been a period of remarkable change and development in the textile industry. That this is true certainly no one will deny. And that these changes have been especially pronounced in the chemistry and technology of textile wet finishing will be affirmed by anyone who has devoted any attention at all to this integral part of the industry. Procedure in dyeing, bleaching, and finishing is today quite unlike that of pre-war days. Surely, but not slowly, the old order has changed, giving place to the new.

There are, however, a few exceptions, both in processes and in products. Among the latter must be named one whose history dates back to the very beginning of dyeing as a science. One of the first technical preparations offered as an assistant in the wet finishing of textiles, it is still one of the most generally used; and so can be said to have truly stood the test of time. This product is Turkey red oil; or, as it is more generally known today, sulphonated castor oil. The "vintage" of sulphonated oils is well known, for they are mentioned in practically every book or article that has been published on the subject of wet finishing.



Oil sulphonation apparatus . . . . . .

Naturally, during the years that have passed since the first appearance of Turkey red oil in the textile field, many preparations have been offered to take its place. Frequently these substitutes have been possessed of considerable merit, and some of them have found a secure and lasting place in the industry. Many have fallen into obscurity, because they failed to offer sufficient qualification to warrant their continued use. At the same time, the uses for sulphonated oil have constantly increased with the growth of the textile industry, until the manufacture of these products is in itself an industry of some proportions. In some form or other, sulphonated oils are present today in almost every mill dyehouse and laboratory in the country. Truly, a remarkable record for these products or discoveries of another generation, and one that justifies some consideration. The purpose of this paper is to name and to attempt to define some of the well known and perhaps a few of the little known facts concerning Turkey red oils, and so perchance to explain in part at least their notable strength and tenacity of position in a rapidly changing and tremendously important industry.

First might be mentioned the steady and consistent improvement of the methods of sulphonation of oils. The basic principles of sulphonating have shown no radical change, nor is the finished product vastly unlike, in its constituents, the sulphonated oils of a few years back. The methods of bringing about the desired result, however, have been so improved until the Turkey red oil of today is a quite superior product to any of its predecessors.

Although it is easy to find articles and dissertations that give complete and explicit methods of sulphonating, with all steps explained, it is nevertheless true that none of them lists a method that would be followed by any present day manufacturer of sulphonated oils. This is a regrettable situation, but it is one that will continue to exist as long as these methods are cherished as trade secrets by the individual manufacturers. The point is, however, that there has been a great improvement in procedure of sulphonation. Another item is the fact that the raw materials used today are considerably better. USP or CP castor oil, expressed rather than extracted, is more generally used, yielding a product very light in color, and free from the impurities or discolorations of a No. 3 or extracted castor oil. Many oil manufacturers today are using a No. 1 medicinal castor oil. Exact control of time and temperature, to a degree not possible before now, is another factor in the production of the modern sulphonated oil —oil that can be made both acid and lime proof, and freely and clearly soluble in water of incredible hardness.

### Dependability and Versatility in Finishing.

The general dependability and versatility of Turkey red oil in the softening, conditioning, and finishing of textiles must be mentioned. These are the uses to which it has been put since its inception, and which are still general. They involve the recognized superiority of a well-sulphonated oil under hard water conditions, and its practical efficiency under almost any condition of wet finishing. Unquestionably there are other products on the market today that are quite efficient in one or more phases of finishing, and in some cases certain ones seem to offer some feature that makes their use preferable. Similarly, sulphonated oils have their features that in other cases recommend their use. Furthermore, the use of a liquid preparation in the dyehouse, such as Turkey red oil, permits the use of liquid measures of quantity; in many cases this will mean more uniformity of results because the amount

used per batch will be more uniform. The complete and very easy solubility of sulphonated oils, even in cold water, is another feature, for it means maximum efficiency. It is true of nearly all chemicals used in wet finishing, that only in complete solution or emulsion are they capable of giving their maximum results. The behavior of caustic soda is an example of this fact. Totally dry or anhydrous, it can be handled safely and with little or no chemical action on the skin; it is only when it picks up moisture from the air and begins to ionize or dissolve that its caustic properties become apparent. Similar peculiarities can be noticed in other

Photo, courtesy Textile Finishing Machinery Co.

A battery of dye jigs . . . . . .

textile chemicals; anhydrous, they are practically inert, while in solution they exhibit their distinguishing characteristics. So ready solubility is generally recognized as a desirable factor in chemicals used for wet finishing.

Concerning the softening action of Turkey red oils, much has been written; as also about their particular and unusual efficacy as penetrants, dye aids, and conditioners, for every type of fiber and nearly every sort of condition. But it is not the purpose here to give a resume of the well known and long practiced uses for Turkey red oils. After all, it is not in the improved methods of sulphonation, not even in the myriad number of recognized uses, that we find the basic reason for the continued and active presence of these oils in the textile industry. In the final analysis, it is in their adaptability—the readiness and ease with which they fit into the new needs and the new conditions of wet finishing—that they find their true *raison d'etre*, their justification of existence.

### Adaptability.

Adaptability might almost be called a single word definition of the "survival of the fittest" doctrine; it is that essential quality that enables persons or things to carry on in new environments, or under changed conditions. The adaptability of sulphonated castor oil[1] is nowhere better seen than in the new and important uses it is finding today. Due to its powers as an emulsifier, with it we are able to render soluble[2] in water the otherwise totally insoluble solvents and penetrants that are finding such general use in the industry today, and whose adaptation marks a notable forward step in the science of dyeing and bleaching.

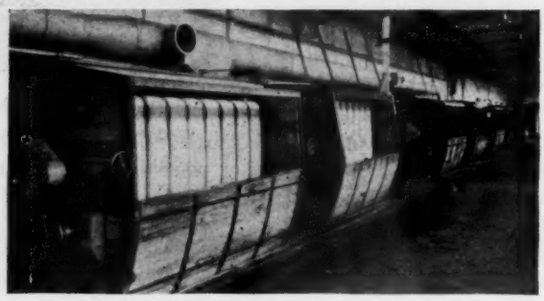
In spite of the fact that they are, with one particular exception, comparative newcomers in the textile field, they are already recognized as holding a very important position among dyehouse chemicals and aids. These solvents are not all the product of one manufacturer, nor are they all equally efficacious. It is interesting to note that these very modern products of the chemical laboratories are being used in large quantities in the textile industry in combination with one of the oldest of all textile chemicals. Being insoluble in water, they require the use of an emulsifier or carrier to permit their use in wet finishing. Sulphonated oils seem ideally suited to act in this capacity, for they render emulsifiable or miscible in water nearly all the new solvents, and they do it well.

Although different proportions are necessary for different classes of these penetrants and solvents, they can all be emulsified by the use of the one emulsifier, Turkey red oil; though in some cases it may be necessary to use a bit of caustic soda solution to give a homogeneous mix. Most of these prepared solvent or penetrant mixes can be bought ready mixed as cheaply as they can be prepared. A few words on their preparation may not be amiss, however, as familiarity with these products is probably desired by the mill man even if he has no desire to make them himself. Of course, no general formula that will apply in all cases can be given, for there is none.

As a basis for experiment, however, the use of two parts of fifty per cent sulphonated castor oil and one part of solvent is very satisfactory. A good grade of sulphonated oil is essential. Such a blend as named would give:

1/3 Solvent
1/3 Anhydrous sulphonated oil
1/3 Water

This should be clear after stirring, and should give a



Photo, courtesy Rodney Hunt Machine Co.

A battery of washers . . . . . .

quick and complete solution or emulsion in water. If the blend is not homogeneous and clear, it indicates an imperfect result, and it will probably show a separation on standing a while. This can usually be remedied by the addition of a small amount of alkali, such as caustic soda solution. Should this not produce the desired homogeneity and clarity, a higher percentage of sulphonated oil to solvent is necessary. These preparations, when properly made, are very stable, and show no deterioration on storage. Where excess alkali is present, they show some alkali sludge settlement, and perhaps some discoloration, but this causes

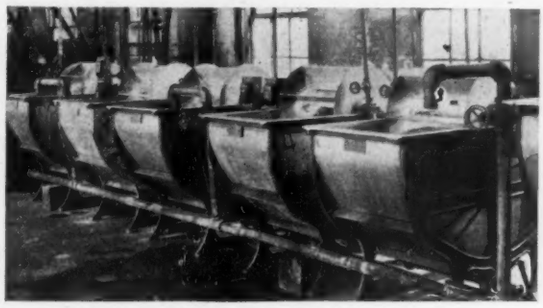
(1) Sulphonated castor oil is mentioned as being representative of all of the sulphonated oils used in the textile industry, and not because it alone possesses the properties mentioned.

(2) The word soluble, as used throughout the paper, means "soluble" in the accepted sense of the word, and hence does not necessarily refer to a true ionic solution.

no harmful action on textiles, except where the alkali may in itself be objectionable.

By slight variations of the basic formula given, and with a little practice, it is possible for any mill chemist or dyer to make good blends of sulphonated oil with pine oil, ethylene dichloride, carbon tetrachloride, xylol, benzol, tetralin, and many other such solvents. Water soluble solvents, such as acetone and alcohol, may also be incorporated, and are often found in commercial preparations.

Mixtures such as these, or combinations of them, constitute a large percentage of the penetrants, boil off agents, and wetting out preparations used today, and they are remarkably efficient. Their penetrating and wetting out qualities are due largely to the solvent present, these solvents also dissolve grease and oil present on the yarn or fabric. The sulphonated oil holds these dissolved particles in emulsion with the solvent, and at the same time adds its own particular properties as softener and cleanser. The emulsified or suspended impurities are easily rinsed out.



Hosiery dyeing machines—open type . . .

This, in brief, is the theory of these modern dyehouse aids. The perfect miscibility in water of insoluble solvents and penetrants effected by the use of sulphonated oil may be visually demonstrated by a very simple little experiment. In 100 c.c. of pine oil dissolve sufficient oil soluble dyestuff (such as an oil red) to give the pine oil a decided color. Blend this dyed pine oil with 200 c.c. of fifty per cent sulphonated castor oil, and stir until homogeneous and clear. If a small amount of this blend is poured into a beaker of water and agitated slightly, the water will be uniformly colored a pale red (if a red dye was used) in spite of the fact that both the pine oil and the dyestuff are insoluble in water. There is absolutely no demarkation between the insoluble dyed penetrant and the soluble sulphonated oil; the dispersion is perfect. And this same fact may be noted in all these sulphonated oil and solvent mixes; provided the mix is clear throughout.

### Soluble Mineral Oils.

Similar in the theory of their preparation, but sometimes more difficult in the practice of it, are the well known soluble mineral oils. They have been on the market for quite a long while, under various trade names, but for some reason have not always met with the approval they often deserved. Their use is increasing, however, as their many desirable properties are becoming more apparent; and today they are found in a very large number of mills, under such names as soluble rayon oil, soluble wool oil, sulphur black developer, and others, not to mention the numerous trade names given them. The properties of the soluble mineral oils depend to a considerable extent upon the mineral oil used, and this may vary all the way from gasoline and kerosene to the heavy bodied lubricating oils. From this may be gathered an idea of the tremendous possibilities of such preparations. Used for oiling yarn, they offer the advantage of being easily rinsed out in warm water without the use of any scouring agent, or any special de-oiling treatment. Used as an after treatment on dyed goods, the soluble mineral oils impart a pleasant luster and feel to the goods. Sulphur black hosiery has been so treated by many mills for years, and undoubtedly other colors could be similarly treated, to advantage.

Mineral oils can be solutized with sulphonated oil alone, and for this purpose sulphonated red oil seems best suited. This gives an unstable mix, however, and so one that is hardly satisfactory for general use. Usually, a soluble mineral oil is best prepared with mineral oil, sulphonated castor oil, and a third ingredient whose purpose is to lend stability and clarity to the blend. Even so, these products are rather delicately balanced, and do not lend themselves very handily to preparation in the mill. Even when well made, these mixes will separate if subjected to very low temperatures; though they can be restored to their original condition and qualities by the use of heat and agitation. A good soluble mineral oil gives a white milky emulsion in water, and the emulsion should be stable for some time. One that quickly breaks down is not properly balanced, and may cause difficulties.

These slight objections to the present uses of the mineral oil emulsions are being quickly ironed out by manufacturers of these preparations. While there are several emulsifiers possible to use, sulphonated oil is one of the most dependable; and, as in the case of the penetrants, lends some of its own qualities to the mineral oil emulsion in which it is used. Such emulsions also show superiority in cold water use. Triethanolamine-oleate emulsions of mineral oil are now also being used, but they belong in the class of emulsified mineral oils, which are usually soap and mineral oil preparations, already in water emulsion, though in a concentrated form. Turkey red oils, through their use in the soluble mineral oil preparations, again showed their versatility and their adaptability in the textile wet finishing field.

Though it is possible that this paper may have named a few salient facts concerning the characteristics and the uses of Turkey red oil, it is undoubtedly true that very much more again could be written concerning the many individual and as yet not generally known properties of the sulphonated oils that have been discovered by experienced dyers and mill men. One mill chemist uses a blend of dichlor-ethyl-ether and sulphonated oil for cleaning Monel metal dye tubs. Another uses sulphonated castor oil in with the stripping agent to prevent undue harshness while stripping. These individual discoveries are innumerable, and would offer much of interest if they could be gathered and edited.

# Some Problems of Southern Textile Mills

Mr. Gossett.

By B. B. Gossett

Pres., Chadwick-Hoskins Co., and 1st Vice-pres., American Cotton Manufacturers Ass'n.

**MR. GOSSETT'S clear analytical ability, and his fearlessness in expressing his convictions, are well known. He utilizes both in this discussion, by presenting some facts that are rather jarring to the southern manufacturer, and by condemning those he terms as "obstinate and selfish individualists."**

**The matters of production control, legislation, and taxation, and other problems of the Southern mills are covered in this discussion, which is taken from a paper delivered at the Southern Textile Association convention.** . . . . . .

IT SEEMS unnecessary to point out that we are in the midst of one of the most profound and trying periods of depression in the history of modern business. Since the early fall of 1929, the entire world has been in the throes of an industrial and commodities panic of major dimensions from which American business and the American people have not been spared. Indeed, practically everyone has been most seriously and adversely affected. Of all the great industries, the textile industry has perhaps felt this period of depression more acutely than any of the others. This has primarily been due to the fact that our industry was already greatly weakened as a result of a prolonged period of unsatisfactory and unprofitable business prior to the beginning of the present acute depression while, for several years previous, most other industries had enjoyed a prolonged period of profitable operations. At this time conditions in our own industry are no worse than in other industries. In some respects they are better.

### "Selfish Individualists."

Unfortunately, the end is not yet in sight, but there are good grounds for hoping the worst is back of us. Among other things, we know that our basic raw materials are now at a point where further shrinkage seems improbable so that the industry will not be confronted with further serious inventory adjustments. It has also been definitely demonstrated that production can be kept in proper balance and a majority of the mills have in fact adopted the policy of regulating production to present and prospective demand. Indeed, in a word, the textile industry of the United States has undergone a general overhauling in fundamentals in the past year and this, coupled with the tendency of most mill executives to respect the law of supply and demand, affords a real basis for confidence in the future.

It is most deplorable but we still have in the industry a few obstinate individualists who continue unashamed in pursuing a policy of unenlightened selfishness by operating to capacity under any and all conditions, cutting prices when not justified, and trying generally to profit at the expense of their neighbors. None of the people I have in mind has subscribed to the 55/50 plan. Neither have they signed the declaration of policy providing for the elimination of women and minors from night work nor have they co-operated in any way in the many constructive and meritorious plans that have been recently advanced for the general good of the industry. Most of these people are operating on schedules ranging from 120 to 130 hours per week. They are simply standing in their own light, while doing the entire industry a great deal of harm. They can't see the forest for the trees. Surely 15 per cent of the industry can't be right and the other 85 per cent altogether wrong. It is true that the group subscribing to such a policy is a comparatively small one, but it continues powerful enough to keep the industry in a temporary state of demoralization.

### What Happened to Print Cloths.

Good management, sound merchandising policies and efficient and economical manufacturing are essential to the success of our business. Recently the industry has suffered more from poor merchandising than all other agencies combined. I particularly have in mind recent activities in the grey goods markets with especial reference to print cloths. Going back only about two months ago, a careful study of the statistics will show the strongest statistical position in recent years on certain lines of grey goods. This condition was brought about by general and sustained curtailment over a period of more than a year by the so-called co-operative mills. As a result of this, combined with an unusually heavy seasonal demand during the months of February and March, many mills were able to liquidate stocks and make substantial sales running several weeks ahead at prices which gradually advanced to an average of about one cent per yard over the year's low.

It was only natural, following such a period of unusual activity, that a period of quiet should develop. Unfortunately, this came at a time when the price of raw cotton was declining. Even so, there was no good reason for a decline in the price of cotton goods. But instead of realizing this and making the best of the opportunity by taking advantage of the temporary period of lack of demand to hold prices firm and widen manufacturing margins, a great many manufacturers and their agents have very unwisely pursued an opposite policy—they have been persistent in trying to force the situation by cutting prices which has resulted in the development of very little additional business; on the other hand, prices have again been forced down to the low point of the year and confidence has been badly shaken. Those who practiced such unsound policies cannot be too strongly condemned. There is no permanent place in the industry for them. There is never any justification for slashing prices below the cost of production, especially in the face of a strong statistical position when prices ought to be advancing and not declining. In a word, the industry has made a pretty fair job of balancing production to demand but all of the advantages that have been gained in this direction have been literally thrown away by stupid, spineless and indefensible merchandising methods. In the light of these recent experiences, it is to be hoped that those who have indulged in these unsound practices have learned their lesson. But only time will tell. Meanwhile buyers are naturally holding off and cannot be expected to enter the market again in a large way until something happens to restore their confidence.

### A Warning to the South.

"UNTIL a year or so ago, the ascendency of the South to the forefront in cotton manufacturing had been regarded as permanent. In the light of recent developments, one cannot fail to question the permanency of our position. In many respects the South has been going backward while New England has been moving forward. Legislation, and especially taxation, has become increasingly burdensome in the South, while improving in New England. No longer are New England mills moving South. No longer are New England textile plants being dismantled. ***

"A large percentage of the new textile machinery is being bought by New England mills. This means New England is junking old, worn-out and obsolete machinery. * * * In the past few years more than five million spindles in this country have been dismantled; practically all of these were in New England. If, as some hold, at least two million additional spindles will have to be scrapped before the industry will right itself, I can't help but feel that the South, not New England, may be called upon to make this tremendous sacrifice."

In the language of the distinguished governor of North Carolina, we are now face to face with the supreme test of our collective common sense, of our intellectual and moral courage, and of our faith in the essential soundness of the great basic industry of which we are an important part. It is absolutely necessary that we all adjust ourselves to an entirely new and adverse situation. We must put our houses in order. The old routine and self-satisfied way of performing one's duties must be thrown in the discard. Individuals or companies which continue a policy of trying to operate in the same old way will inevitably lose their places in the picture. None of us has ever before had such an opportunity to demonstrate our qualities of leadership and capacity for work. Those who can demonstrate that they are equal to the conditions have no real basis for concern about the future. Those who fail to respond fully and ungrudgingly to the existing emergency have no right to expect a permanent place of responsibility in our industry. There is really no place for them. The weak and indifferent can and must be replaced by those who can keep up with the procession. We must all keep constantly in mind that real success comes only as a reward for real accomplishment. This can only be brought about through hard, conscientious and intelligent work. No matter how well we may think we are now doing our jobs, we can and must do better. Real leadership (and you are all leaders in your chosen field) not only requires intelligent application but devotion to one's work, a fine sense of understanding, a great abundance of patience and an invincible determination.

Until a year or so ago the ascendancy of the South to the forefront in cotton manufacturing had been regarded as permanent. In the light of recent developments, one cannot fail to question the permanency of our position. In many respects the South has been going backward while New England has been moving forward. Legislation, and especially taxation, has become increasingly burdensome in the South while conditions in these respects are rapidly improving in the New England States. No longer are New England mills moving South. No. longer are New England textile plants being dismantled. On the other hand, New England has set her shoulder squarely to the wheel with a determination to win back the position she formerly held in the textile world. Her people are not only sympathetic but are lending their active aid to this end. In the South taxes have increased to an alarming extent. For the first time in the history of the southern branch of the industry, many of our mills are now paying substantially higher taxes than their competitors in New England.

### Taxation Higher in South.

In the southern states where the largest textile development has taken place, there has been a heavy increase in the tax burden in the past ten years. According to figures submitted by Mr. B. E. Geer, until recently president of the American Cotton Manufacturers Association, the increase in the state of South Carolina, for example, has been from an average of 55 cents per spindle in 1922 to an average of 78 cents per spindle in 1930. In North Carolina the heavy burden came with the year 1923 and the average tax per spindle today stands at approximately 71 cents. As compared with the South Carolina rate of 78 cents and the North Carolina rate of 71 cents, a New Bedford authority on taxes was recently quoted as saying that for 1930 the average rate of taxes paid by the New Bedford mills per spindle was 52.15 cents and by Fall River mills 43.96 cents. It will be seen that the highest of these two eastern rates is 33 per cent below the rate in South Carolina for the same year. It is also simply astounding, but true, that the increase in the

*cost of government* in the principal textile manufacturing states in the South in the past fifteen years has exceeded similar increases in New England by several hundred per cent. For instance, *the cost of government* in Massachusetts in the year 1928 exceeded the cost in 1915 by 93 per cent while in the state of North Carolina the *cost of government increased* 847 per cent from 1915 to 1928 and in South Carolina the increase for the same period was 917 per cent.

This reflects an alarming situation and suggests the question—what can we do about it? I will not attempt to enter into a detailed discussion of the remedy except to urge that each one of you hereafter take a more active interest in trying to send good men to your general assembly—men who are honest and competent—men who have the good of their state and industry at heart—men who can be relied upon to stand steadfastly for rigid economy and a businesslike administration of the affairs of your respective states. One of the chief troubles at present is there are too many people on the public pay rolls—too many in numbers as well as too many who are unfit. The cause of public education—however worthy—has also been permitted to become unduly burdensome. I would not deny a single child the right of a good common school education but I do believe the amount of money being spent by our public schools and colleges is entirely too great.

But it is not only a question of legislation and taxation that is disturbing. If I am correctly informed, a very large percentage of the new textile machinery that has been sold in recent years has been bought by New England mills. What does this mean? It simply means that New England is junking old, worn-out and obsolete machinery and replacing it with modern up-to-date equipment. But we are not only falling behind the procession in this respect, we are also dropping behind in the matter of installing more efficient methods of operation in our plants. I venture the assertion that the so-called labor extension plan, which has been the source of so much discussion and trouble in the South in recent years has, on the average, been carried much further in New England than in the general run of southern mills. Apart from this, wage reductions in New England in the past year have been on the average more drastic than in the South, so I think it may be safely assumed that those mills in New England which have been revamped and rehabilitated and which are under good management can produce goods as cheaply and in some cases cheaper than the average southern mill.

### Will the South Have to Sacrifice?

In the past few years more than five million spindles in this country have been dismantled. Practically all of these spindles were in New England. There are those who still firmly hold the view that at least two million additional spindles will have to be scrapped before the industry will right itself and can be operated on a stabilized earning basis. I am not a pessimist by nature or otherwise, but I can't help but feel, with the lights now before me, that the South, and not New England, may be called upon to make this tremendous sacrifice. But we must face this possible crisis with renewed courage and with a firm resolve that it shall not happen. In my judgment, the future holds even greater opportunities and promise than ever before for those of us who have the stamina, character and intelligence to successfully meet emergencies. *We must not fail! We shall not fail!*

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## Scientific Research Is Only Sound Insurance Against Industrial Over-Capacity.

"THE ONLY sound insurance against over-capacity, and 'industry obsolescence' is a soundly conceived, systematically conducted, and properly controlled research policy directed at the development of new products and the improvement of processes." This was the assertion of Prof. Robert F. Elder, division of business and engineering administration at Massachusetts Institute of Technology, in an address at the afternoon session, Tuesday, June 16, at M. I. T., Cambridge, Mass., of the board of directors of U. S. Institute for Textile Research, which, in addition to reports of scientific research in progress and projected, was devoted to a discussion of the subject "What Is Being Done, and What Can Be Done, in the Field of Distribution Research in the Textile Industry."

"The job expected of market research in the past," stated Prof. Elder, "has been the finding of customers for goods which have been produced, both as to quantity and quality, in accordance with plant facilities and past experience. The jobs of technical and scientific research have been in a large measure to improve manufacturing methods and processes in order to reduce costs, and hence earn a profit in the face of enforced decline in price.

"In this age of change, probably the only satisfactory solution of the problem of excess capacity which confronts most industries is the adaptation of both kind and quantity of goods produced to the needs of the consuming public. This means limiting the production of existing goods to the quantities which can be profitably sold, and developing new products to take up the slack in productive capacity."

### Research Lack a Cause of Profitless Era.

A. W. Zelomek, statistician-economist of the Fairchild Publications, who also spoke at this session, stated that research is a part of the equipment of any industry, and textiles are no exception. "Lack of understanding of the markets that the textile industry is serving," stated Mr. Zelomek, "was probably one of the major reasons for the profitless era during the past decade, while industry in general was experiencing the most favorable earning period in its history. It will be absolutely essential that the various companies in the textile industry give greater heed to distribution research than they have done hitherto, for the industry could hardly go through another ten years of a profitless era without dire results."

Mr. Zelomek emphasized the need for determining the potential output of a fabric or fabrics and correlating this information with the distribution or sales of these items.

# "Home-Talent" Program Features Southern Textile Association Meeting

**THE SEASIDE convention provided an opportunity for the delegates to enjoy surf bathing, and other summer sports. The program was arranged to present largely members of the Association as speakers, and these acquitted themselves most favorably.**

**The main exception—Mr. Gossett—thoroughly qualified also and delivered a forceful and significant presentation of facts concerning the southern textile industry's future problems. . . . . .**

WITH A PROGRAM composed almost entirely of addresses by association members, the annual convention of the Southern Textile Association was held on Friday and Saturday, June 12 and 13, at the Isle of Palms, near Charleston, S. C. Two features in the business sessions were of importance as regards the association—one was a set of definite recommendations made by the retiring president advocating certain changes in the structure of the discussion or sectional meetings; the other was the election of overseers to fill offices, whereas heretofore all offices had been held by superintendents and agents only.

T. W. Mullen, superintendent, Rosemary Mfg. Co., Rosemary, N. C., was elected president, succeeding J. O. Corn, superintendent, Pacific Mills, Columbia, S. C. Frank K. Petrea, superintendent, Swift Mfg. Co., Columbus, Ga., was made vice-president succeeding Mr. Mullen. H. H. Iler, master mechanic, Union Bleachery, Greenville, S. C., was chosen as chairman of the board of governors; and the following additional members were named to the board: M. R. Vick, overseer of carding, Rosemary Mfg. Co.; Culver Batson, superintendent and manager, Consolidated Textile Corp., Lynchburg, Va.; R. J. Jennings, assistant superintendent, Lanett Mill, Ala.; and F. L. Still, superintendent, Victor-Monaghan Co., Greer, S. C.

J. O. Corn.

The semi-annual meeting, in the fall of this year, will probably be held in Charlotte, N. C., at the new country club being established there.

A feature of interest which developed at the meeting, following as it did upon National Cotton Week, was the endorsement given by the convention to various uses of cotton goods, in enlarging markets for mills' products. A vote endorsing the move to induce starch manufacturers to remove a two-cent charge made for shipping starch to mills in cotton bags instead of burlap was unanimously carried, and several members spoke in favor of urging further the use of cotton containers for cement, fertilizer, flour, etc., instead of other materials; as well as urging more interest in the wearing of cotton garments by individuals.

Retiring President Corn, following the preliminaries of opening the convention on Friday morning, presented a brief address, setting forth definite recommendations to the Association, based on his work with it along the following lines:

That a geographical study of the membership be made, and that divisions be formed, not necessarily conforming to state boundary lines, but to the best advantage of the membership involved. That these divisions be under the direction of a general chairman, each chairman to be assisted by sectional chairmen.

That the semi-annual meeting be dispensed with, and be replaced by a meeting of all divisional chairmen and sectional chairmen to lay plans for the various sectional meetings.

That all dues be paid to the general secretary and a portion of these dues allowed to each division for current expenses. That each division be allowed to vote for general officers, according to the membership of the division; and that all general chairmen be elected by the association at its annual meetings.

### Gilbert Talks on Trade Standards.

L. R. Gilbert, a former president of the association, who is now connected with the Division of Trade Standards, Bureau of Standards, Washington, D. C., followed Mr. Corn on the program with a description of how commercial standards for various industries are established, and of the co-operation of the National Bureau of Standards in this work.

T. W. Mullen.

Mr. Gilbert described the activities of the Textile Section of the Division of Organic and Fibrous Materials in the Bureau, telling of how typical standards are developed by thorough testing with adequate equipment; and then illustrated the work of the Division of Trade Standards in the development of a standard for a given industry, product or purpose. He explained how this is achieved by close co-operation and conferences with representatives of different branches of the industry in question. Tentative specifications are set forth and used as a basis, and through hearings and conferences, specifications, rules and tolerances are outlined and submitted to the industry for formal acceptance.

Mr. Gilbert emphasized the importance and necessity of establishing and maintaining standards, using broadcloth as an illustration as follows: Referring to an article by John Reynolds in *The Melliand*, under the title, "Debasing Standard Fabrics Harms Cotton Industry," Mr. Gilbert called attention to "the fine, high-grade cloths such as lawns, madras, organdies,

rayon laces, cotton gabardines, cotton venetians, broadcloths, and others that have been skimped by the manufacturer in his effort to make a cheaper fabric until there is no longer the heavy demand for them that once prevailed.

"When broadcloth, for instance, was first introduced into this country, it was a most beautiful fabric, it felt like silk, and wore as well as the trade demanded of any fabric; it was constructed of 144 warp and 76 filling threads made of 100s/2 gassed yarn.

Left, M. R. Vick, who spoke Saturday morning; right, H. H. Iler, elected chairman of board of governors . . .

Now, after various successive downward changes in the construction, it is possible to purchase broadcloth that carries only 80 warp and 56 filling threads, which would suggest that the man who bought a shirt made of the original broadcloth would be very much disappointed if he acquired one made of the cheaper construction.

"The other fabrics mentioned are in the same category, and are going out of favor because the undercutting of quality has practically ruined the demand. There might, however, be a continued call for these fabrics if a minimum standard were established definitely specifying what the construction should be for a certain brand of a given fabric so that the manufacturer could know what he is putting in stock, and the customer could know what he is putting in stock, and the consumer could know what he is buying."

Mr. Gilbert then discussed and described the commercial standards established for regain in mercerized cotton yarns, cotton fabric tents, tarpaulins and covers, and cotton goods for rubber and pyroxylin coating, and indicated how the work of the Division might be extended to further benefit for the industry. He discussed also the advantages of the labeling of goods on which Bureau standards had been established.

### Wooten Talks on Co-Operation.

L. E. Wooten, vice-president of the Lestershire Spool & Mfg. Co., with headquarters in Charlotte, was the next speaker, being introduced as the representative of the "traveling men". Mr. Wooten spoke on the subject of co-operation, especially as between the mill man and the salesman. He said in part:

"What does the word 'co-operation' mean? Mr. Webster tells us that it means: 'The act of working jointly together.' There are two types of co-operation constantly before us. One we might call passive, including those people who do merely work that is required of them; the other we might call hearty co-operation, and in this class come the men who not only do their work well, but are constantly striving to help their co-workers to improve their efforts.

"How can we know that we are co-operating? One of the best ways to find out for ourselves is to rub elbows with our fellowmen as often and in as many different ways as we possibly can, and I know of no better way for the textile men and the traveling men to find out how to co-operate with one another than to attend the meetings of the Southern Textile Association.

"None of us knows it all, and we never know who can do something for us or tell us something that we did not know which would be helpful to us. The salesman, the buyer and the user should co-operate with one another 100 per cent. Every factory that dots this country today is there on account of salesmen. If someone wasn't selling the product from that factory, it could not exist.

"There is a great deal of difference between a salesman and an order taker. There is also a great deal of difference between a buyer and an order giver. The salesman is the man who should be a creator with not only new ideas but helpful ideas, and I dare say that a salesman, who knows his line, many times can tell a man in a few minutes more about many things than he can find in a library of books or by reading a long time.

"Generally a salesman is talking from not only his own experience but the experience of many others, and experience, though sometimes costly, is, as we all know, the basis for our existence. Watch the man who always co-operates with the salesman, giving him an opportunity to tell his story, whether he is interested or not, and see if that man is not the one who always goes to the front and is really the big man. The man who never has time to give the salesman a chance either to show or to explain his wares, believing that he already knows everything about it, is only fooling himself, and does not take into consideration that

Left, L. E. Wooten, who discussed co-operation; right, L. R. Gilbert, who spoke on trade standards . . . .

somewhere possibly at that very moment salesmen are calling on people to sell the product which he is making, and if they did not get an opportunity to show their wares, he would soon be out of orders. The man who gives salesmen a deaf ear, how-do-you-do, and good-bye, all at the same time, may be getting rid of a man who made a specific call for the purpose of co-operating in a helpful way.

"There are no doubt many traveling men who bore or prove themselves uninteresting to some people, how-

ever, you are not buying the man, but what he has for sale. The salesman who makes himself unpopular and has no helpful thoughts or ideas will soon find that he may be the right man but in the wrong place."

Mr. Wooten concluded by urging mill executives, superintendents, overseers, and salesmen to co-operate with the Southern Textile Association; the mill executives by sending their men and paying their dues and expenses, the superintendents and overseers by interesting others in the work and by participating in it, and the salesmen by supporting the organization and attending the meetings, not with the idea of taking orders, but with the honest intention of co-operating to make the Association larger and more constructive.

### Background and Stability of Southern Textile Manufacturing.

The concluding address of the morning session was made by John A. McFalls, superintendent of the Ranlo Mfg. Co., Ranlo, N. C., who discussed "The Back Ground of Southern Textile Manufacturing and Its Stability." Mr. McFalls delivered a forceful and eloquent speech, describing the pioneers in the industry, their hardships and struggles, and paying tribute to the honest endeavor, ingenuity and common sense of the men who have builded the great southern textile industry. He outlined and lauded the progress which has been made in equipment, building and village construction, and personnel. He praised the influence of the Southern Textile Association in building up the personnel of the operating executives and their efficiency, and in bringing about better machinery and working conditions, and complimented the South upon the character of the textile schools which are training men for the industry.

J. A. McFalls.

### The Annual Association Banquet.

The annual banquet of the Association was held on Friday evening. This followed a golf tournament at the Summerville Club, in the afternoon, under the supervision of W. B. Uhler, of Spartanburg. At the banquet, musical entertainment was provided, and Mr. Uhler awarded the tournament prizes. N. H. Alford, of Greenville, won the Association cup with low gross score, and Hughes L. Siever, of Charlotte, was awarded the prize for low net score. J. O. Corn was presented with the retiring president's medal, by Frank E. Heymer, a past president, on behalf of the Association. W. M. McLaurine, secretary of the American Cotton Manufacturers Association, who was an honored guest, announced a request from President Callaway of his Association concerning the use of cotton bags for shipping starch, and also presented, on behalf of the Southern Textile Association, gifts to Mrs. Marshall Dilling and Mrs. J. O. Corn.

The feature speaker of the convention was B. B. Gossett, of Charlotte, first vice-president of the American Cotton Manufacturers Association, and president of the Chadwick-Hoskins group of mills. Mr. Gossett spoke at the banquet and delivered a forceful and pertinent address. After paying tribute to the Southern Textile Association for its accomplishments, Mr. Gossett delivered a most striking presentation of present conditions in the textile industry. The major portion of his address is reproduced in this issue on page 834. The concluding speaker at the banquet was Dr. A. C. Chappell, of Monroe, N. C., who delivered an entertaining and humorous talk.

The concluding session and business meeting, on Saturday morning, brought addresses from two other Association members—Frank K. Petrea, superintendent, Swift Mfg. Co., Columbus, Ga., and M. R. Vick, overseer of carding, Rosemary Mfg. Co., Rosemary, N. C. Mr. Petrea spoke on "Modern Times Demand Modern Men as Well as Modern Machinery." His paper is presented in part on page 840 of this issue.

### The Arkwrights Hold Meeting

IMMEDIATELY following the Friday morning session of the Southern Textile Association, The Arkwrights, Inc., subsidiary research organization, held a brief business session.

President Marshall Dilling presided. Secretary Walter C. Taylor submitted his report, and Mr. Dilling announced the results of the ballot election for the new board of directors. Under a change in by-laws, the board consists of nine active or full members; three associate members; three corporate members; and three contributing members. The following were selected: Active, for three years: Richard W. Arrington, W. B. Hodge, and F. G. Cobb; two years, T. W. Mullen, H. K. Hallett, and J. O. Edwards; one year, Marshall Dilling, J. A. Chapman, Jr., and Carl R. Harris. Associate, Culver Batson, J. O. Corn, and David Clark. Corporate, Barber-Colman Company, Borne Scrymser Co., and Universal Winding Co. Contributing, Balfour Mills, Belton Mills, and Republic Cotton Mills.

The new board of directors re-elected the present officers. It was announced that J. O. Corn and L. A. Elmore had, since the last meeting, satisfactorily completed tests assigned to them, and, upon recommendation of the research committee, were elected to full membership. Arkwright medals for these men were presented on Saturday morning at the Association meeting by Mr. Dilling.

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### "Taking Down the No Admittance Signs."

Mr. Vick spoke on "Taking Down the No Admittance Signs," referring not only to our mills, but to our minds and thoughts as well. He said in part:

"We of this generation have not exhausted nor will we exhaust the opportunities for improvement. But we can continue to point the way to perfection, through the Southern Textile Association divisions, The Arkwrights, and the textile educational institutions. You ask, why should I spend an hour or two each day trying to solve problems from which I may never gain any material benefit. Here is your answer: I have seen in my day overseers and superintendents go to their jobs each day with fear and trembling that their work was going to go bad, and they just did not know what to do to make it go right; they did not know if they could hold their jobs until the day was over. I have heard overseers say that they had seen times when they had rather go to jail for the day than

(Continued on page 873.)

# Modern Times Demand Modern Men

**By Frank K. Petrea, Superintendent,**
Swift Manufacturing Co., Columbus, Ga.

**TALKING plainly as one operating executive to another, Mr. Petrea asks here some pertinent questions which every superintendent, manager, overseer and every other key man in the industry should consider well. He has thrown aside the cover from alibis, shortsightedness and lack of ability—and has pointed out, in part, the way for every man to improve his job and his own value on it. These remarks are taken from the paper read by Mr. Petrea at the Southern Textile Association convention last month.** . . . . . .

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THE SUBJECT which I have assigned myself to discuss may at first thought seem out of place and yet I hope you will agree with me that it is one of the most important, if not *the* most important we have to solve. I want to talk about ourselves, as operating executives in this great industry; the part we play and our responsibility not only to our plants, but to ourselves.

During recent years, and at the present, we hear and think much about new developments in mill machinery and processes—one-process picking, long draft spinning, control of regain, high speed looms, better warp preparation, etc. These and other modern developments, we are told, are becoming essential in the fight for more efficient operation and better quality of product. We also are impressed with the absolute necessity of replacing machinery and processes which have worn out, or which have been made obsolete by refinements and new ideas and methods in this fast-moving day in which we live.

Mr. Petrea.

### Machines Important—But So Are You.

It is entirely proper that we must give our utmost attention to these things, and yet I am wondering whether many of us are not neglecting a factor equally as important to the efficient operation of our plants, and to ourselves as individuals. Are we neglecting to realize that we, ourselves, must be equipped up to the last notch with these attributes of a personal character as important in contributing to a successful mill as are those mechanical improvements which I have mentioned? Are our friends, the machinery builders, more enterprising and wiser than we are in refining their products, in giving us the last word in equipment? It is a well known fact that no successful cotton mill is operated today as it was operated ten or even five years ago. Yet, generally speaking, the same individuals are operating those mills who were in charge at that time. My question is, have we as overseers and superintendents improved ourselves in keeping with the improvements in our mills? Before you or I can answer that question, we must take stock of ourselves. Let us do that, and then see if we can honestly, fairly and impartially, answer it to our satisfaction.

Can we stand off with an outsider's perspective, and say that, as superintendents and overseers, we are running our jobs as well as they can be run, under the circumstances? It would be easy for any of us to say "Yes," and that answer may suffice for our own purposes, but as a matter of self-preservation, if for no other reason, hadn't we better consider seriously the thought brought out by Carl Harris in a talk some two years ago, that unless we keep ourselves pitched up to the demands of changing times, "we will be swept aside by the waves of other men's progress".

### What is Your Attitude?

Getting down to cases, just what is our *attitude* with regard to our jobs? Do we impress a visitor as being too satisfied with things as they are? Do we appear to be "just getting by"? Or do we let ourselves remain contented so long as things "are going along all right?"

Or, do we consider our jobs as a wonderful opportunity and responsibility? Do we consider every new production record, every new low cost, every new quality standard, as a challenge for us to improve on it? Do we realize the position we occupy as to example and influence among our sub-executives and among our mill people?

And what are we doing to equip ourselves to run our jobs better? For, most certainly, if we as individuals do not keep up—no, if we do not keep a step or so ahead of the requirements of our jobs, there is somebody somewhere who has done so, and who is certain to replace us. Someone said a few months ago, in discussing the problems of his job as agent of a mill, that the hardest part about his job was getting it. I must disagree with him thoroughly, for while that may seem on the surface to be the case, I am afraid that gentleman may realize later, for the first time and too late to do anything about it, that he has ever-present competitors for that job, and that one of them, through the necessary self-training and study, has prepared himself to handle the job better than he, and the natural forces of business will replace him with that better-trained man.

### The Importance of Reading.

The formula for each one of us to use, in preventing excessive "ends down," "low production," "loom stoppages," etc., with ourselves (if I may apply familiar mill terms to individuals) may be different in each individual case, but I can emphasize to you the importance of broadening ourselves as men. One method is by reading. You and I can find no legitimate excuse for not keeping up to the minute with develop-

ments in our industry, not only as they apply to our immediate needs, but those of a general nature, through the medium of the several excellent textile publications at our disposal. Just how thoroughly we read them, or just which we should read, I do not say; but I do know that none of us can afford to neglect them entirely. Scientists unanimously agree that no limit to the development of capacity has ever been found. When we look beneath the glamour which history throws around great leaders, we find that each one of them actually developed capacities which he did not seem originally to possess.

To use enough of our time in keeping ourselves well informed, about what other men are thinking about is time well used.

There is a great responsibility that rests with each, the overseer and superintendent. Usually he is a worker promoted. He is supposed to know all manner of things. He is supposed to know about bolts, lubrication, gears, belts and in fact every piece about a machine that would make it operate most perfectly, and to be able to see that it turns out a product of best quality. He should be a manager of men, a job builder, consequently he is always on his guard. He is afraid of being shown up. He is non-committal. He plays safe. He is skillful in inventing excuses and passing on the blame. He feels himself to be a cog in a big mechanism, but he is never a cog. He should always be encouraged to do things on his own. He should originate new methods of work, new ways of putting the work through. Really he should be creative. He should be good at his trade. He must be able to read technical data, and have an imagination that can see work in a finished state. This calls for education and I know of nothing better to say again here than that we use more of our time in reading so that we may stay in the front lines with other men. We are men in authority, and authority is the hardest test of any man. We must go on learning, in fact, we must each make himself the most teachable man in the firm.

**"MACHINERY for business uses in all lines, as well as textiles, has been vastly improved, and is being used in ever-increasing numbers. But remember this: they do not have brains. They cannot generate new ideas. * * * The man who says, 'When I leave the mill I leave my job there until I come back', is all the more like a machine for this trait, and I imagine that he wonders why he does not advance more rapidly." . . .**

If we want to be our best, how do we know, until we try, what we can do? If we only half try, we can only expect to half succeed, and even then it is doubtful if we will realize on our expectations.

Life is a battle of the best brains, and of the most enthusiastic effort, and the man who half tries, you can readily see, is out-classed before he begins.

Until we make up our minds that it is necessary to work like a miner in a cave-in, our present position will probably prove our final resting place.

We should work continually to put everything we have into our jobs and strive with all our might for the best.

Sometimes we feel that the other fellow has the advantage and we are unable to reach the front lines. But listen, this should never stop *real* climbers. Those who can't adjust themselves to others are necessarily eliminated in the race for leadership and the high places are taken by men who are able to ignore momentary irritation because they have a vision of a larger goal.

The wise man who is trying to scale the mountain will not let himself be defeated because he hits his shins against a nasty boulder. So it is with the man who climbs the highest. He never gives up because of temporary difficulties.

In everything there are obstacles that must be overcome. The man ahead must be passed, foolish habits must be conquered, careless spending of time must be discontinued and dread of hard, monotonous work must be overcome. Nothing worthwhile is easy.

And above all, the fear that we may do more than we are *supposed* to do must be put aside completely.

Lindbergh wasn't *supposed* to go sixty hours without sleep or to risk his life alone in a flight across the Atlantic, which he had never crossed, even on a steamship. He was not *supposed* to stake his life, youth, and all his prospects of future happiness on the one effort to win glory for all his countrymen.

Lindbergh's success was due to the fact that he was willing and eager to do that which he was not supposed to do.

Of course, we can't all make a spectacular flight across the ocean, but each of us in our humble job can cultivate the same qualities and apply the same principles which that young man did in his flight. That same grit and fearless ambition will carry each of us in our particular line, high above our original level.

Therefore, it is the duty of each of us to kindle that spark of ambition that will make us strive for higher standards and anxious to pay the price for bigger things.

### Machines Have No Brains.

Plenty of men can do good work for a spurt and with immediate promotion in mind, but for promotion, you want a man in whom good work has been a habit, and that kind of habit will keep him in the front, yet to make him his best there he must think of as someone has called it, "mind pruning".

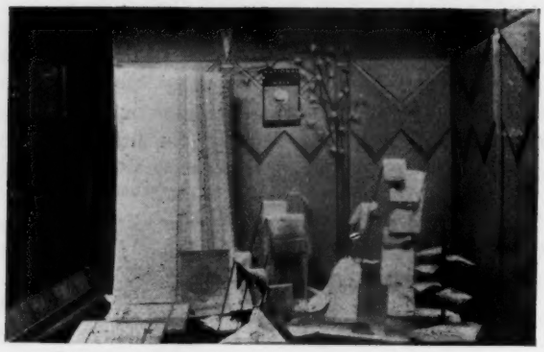
Machinery for business uses in all lines, as well as textiles, has been vastly improved and is being used in ever increasing numbers. But we must remember this, they do not have brains, they cannot generate new ideas.

With all this improved machinery and the changes it has brought about and those still greater yet to come, new ideas that work are in great demand and these ideas must come from men like *us*.

Our heads can actually work wonders, once we get them started. It has been said, and we know it, that it is overwhelming, the percentage of people who do not even think over their work when they are away from it. I have heard some say it like this: "When I leave the mill I leave my job there until I come

(Continued on page 875.)

# Effects of National Cotton Week



Typical window displays of cotton materials during National Cotton Week. These were at McCutcheon's, in New York City.

NATIONAL COTTON WEEK, conducted throughout the nation from June 1st to 6th, developed not only into an achievement of its immediate aims but resulted into the beginning of a continuous and cumulative sales activity in all lines of cotton fabrics.

Primarily, perhaps, the general public's chief interest in cottons was from the standpoint of wearing apparel. While in fact this phase of the industry is by no means the greatest, the popular interest in style and household cottons was the focal point of the displays and pageants during the week. It was significant, for example, that internationally-famous stores such as McCutcheon's, in New York City, devoted their entire window space to displays of cottons.

The idea of National Cotton Week, as is well known, was conceived following a conference between Secretary of Agriculture Hyde, Secretary of Commerce Lamont, George A. Sloan, president of The Cotton-Textile Institute, and Cason J. Callaway, president of the American Cotton Manufacturers Association. Announcement of the plan was made scarcely a month prior to the occurrence of the week itself, and the tremendous interest and enthusiasm concerning cottons, on the part of merchants throughout the country, and the general public, was clearly demonstrated by the extensive manner in which the program was executed with so short a time of preparation.

Through complete co-operation of merchants of all kinds—retailers, wholesalers, chain stores, mail order houses, etc.—particular emphasis was placed upon cotton wearing apparel and cotton for household use. This co-operation was not confined to any particular section, but spread nation-wide immediately. Cottons were brought to the forefront in the retail market through special window displays, emphasis upon cotton in store departments, especially novel and appropriate store advertising, radio addresses, etc. The actual results in the stores cannot be immediately calculated, but may be indicated by the fact that during and immediately following Cotton Week, the Institute offices were deluged by telegrams and other messages from stores all over the country, large and small, enthusiastically reporting tremendous increases in sales of cotton products during the week; some declaring the intention of making the idea a permanent and regular feature of their sales programs.

Several experienced observers of previous undertakings of this character declared forcefully that never has there been a campaign of this kind which was taken up so readily and generally and executed to such a remarkable degree. One reason, undoubtedly, was the fact that cottons have a very definite and logical appeal in so many ways not familiar generally, as a fabric of style, economy, sanitation, durability and utility. Thus the campaign was pitched on no sentimental nor emotionally patriotic plane, but on one of dignity and value-giving appeal.

While, as indicated, style and household adaptations—dresses, shirts, towels, sheets, etc.—represented the basis of the public appeal and appreciation of cottons, yet, a cumulative effect of the interest engendered in this manner was to draw attention definitely to some of the many uses of cotton in other directions, such as commercial and industrial applications, etc. Thus, the advantages of cotton for containers, such as flour, sugar, potato, starch, cement and fertilizer bags, fruit sacks; its recent adaptation into traffic and building markers, and in road construction—these and many other specific, though not generally realized, applications were, through National Cotton Week, brought into wider appreciation.

The local and total results of National Cotton Week, therefore, furnished, as stated, the beginning of a continuous and cumulative sales activity in all lines of cotton fabrics, which should now be kept active and increased by the industry itself in co-operation with the many factors who responded so completely in the execution of the impetus-giving influences of National Cotton Week.

Co-incident with National Cotton Week, were the activities of the Durene Association of America, which continued its splendid work of style shows, fashion talks, etc., in the interest of Durene yarns, and products made from them. Independent of, but working with the major activity, were many local organizations which conducted style shows, pageants, etc. Also the "Wear Cotton" movement, with headquarters in Gastonia, N. C., redoubled its efforts and accomplished very worthwhile results.

# CURRENT TOPICS

## Talk of the Month.

OUTSIDE INFLUENCES, which weighed disastrously in the cotton-textile business through the spring and early summer, are conversely the chief hope of a rising tide therein. The discouraging spring depression in raw cotton directly affected the situation in cotton textiles, but behind that was the postponement in recovery of general business and the psychological influence of another bear market in securities. The chief ray of encouragement through the gloom of that period was the event of National Cotton Week. Otherwise the recent period has been chiefly a time of waiting for the adjustments which are felt certain to bring ultimately a high tide of consumption.

**Waiting for the Tide.**

Inter-relationships of economic affairs were pointedly and drastically felt by cotton, steel and other branches during the last break of the stock markets. But if that influence was to defer the covering of requirements in cotton or textiles, as well as steel and other things, such postponement of buying was bound to accentuate the extremity of inventory positions everywhere and so to make more pronounced the upturn of purchasing when finally realized. And meantime, industry in general had been putting its house in order. As stated around the first of June by the Manufacturers Record, "Industry and agriculture generally are on a sounder basis and in a position to realize on economies effected in their operations."

IF COTTON MANUFACTURERS, however, have progressed with other industrialists in adjusting their operating plants to the order of a new day, they have failed to establish a price policy which would impress buyers. There has been much discussion about whether retailers and wholesalers have passed along the benefits of low costs, but that matter is secondary to sound pricing by mills based on operating costs. In the present condition of inventories, low prices and prospective expanding demand for cotton goods, manufacturers ought to be able to withstand the pressure for uneconomic reductions. Yet National Cotton Week was used by distributors as a time for seeking bargains in the primary markets!

**Stop Aiding "Bargain" Sales.**

What irony! To seek a recognition by the public of the exceptional value of cotton goods already thoroughly liquidated, only to have distributors demand "bargains". Again it is to be emphasized that mill men must use whatever pressure they can exert to bring the retail and the consuming trade out of the bargain fever. It may be a long day before manufacturers see a sellers' market for cotton goods, but it is ridiculous for manufacturers to be feeding distributors in season and out of season for bargain sales. The public is either misled or miseducated by the constant announcement of "sales". When women are taught to hold back constantly for bargains, something is wrong. If retailers are to continue the policy, they at least should not have the tacit co-operation of manufacturers who know that otherwise their goods must and would be bought for regular distribution.

"Price reduction as a result of intelligently directed effort to eliminate every form of waste while maintaining quality is one thing," said W. M. Benney, National Association of Manufacturers, recently in urging all producers to guard against yielding to unbusinesslike wholesale price demands from large retailers. "To cut prices in order to get business without regard to cost is another. The one may eliminate the inefficient; the other creates trouble for the whole industry and retards recovery."

FOR MANY MONTHS there has been discussion of further mergers in the New England field, without result, while on the other hand the South has entered the lists with a notable consolidation in North Carolina. The so-called Newman project in the North was put before several boards of directors some months ago, but while adherents of the plan were confident of its completion early in June, some manufacturers approached were said to be doubtful whether the time was propitious.

**Developments in the Merger Field.**

Several obstacles were encountered and at the time of writing of this review the project was in much doubt, though a rather general feeling seemed to prevail that concentration of the industry into a smaller number of important groups was desirable. One particular reason is that control of production, again a matter of utmost importance this summer, is generally recognized to be harder to attain voluntarily from a large number of relatively small individual units.

From this or other angles, textile men and bankers in North Carolina were said to look upon the formation of Textiles, Inc., capitalized for $17,500,000, as a project of considerable significance. The textile and financial interests concerned with previous mergers in New England are said to be in favor of the extension of the movement and the idea has been expressed that the merger in Gastonia, N. C., if successful, will set the pace in consolidation over the mill districts of the South.

AS A GENERAL industrial consideration, wages have continued to be a bone of contention. Yet the difference of opinion that existed on the question six months ago remains. In one respect the subject is clearer. It is more generally recognized that the problem is not one for abstract consideration, but varies according to the kind of employment and the condition with the individual unit of an industry. The impression prevails however, that in the mechanized industries there is less danger of pressure from buyers for lower prices based upon savings in costs when these

**Employer-Employee Problems.**

# Testing Laboratory at Clemson College

IN ORDER to meet the increasing demand for textile students trained in textile testing, the Textile Department of Clemson College, South Carolina, has just installed a most up-to-date testing laboratory. This testing room is equipped with American Moistening humidifying and de-humidifying units automatically controlled. It is important to know the properties of not only the skeins and fabrics but also the fibers before they are manufactured into the finished product. The testing equipment consists of the various machines for testing fibers; Scott's skein and fabric tester with compensating device for regain; Scott's single strand tester; Etablissements, Jules Richard, Paris, denierometer; Duplan cohesion tester for silk and rayon; and both Aldrich and Scott regain indicators. The testing room is completely insulated with 2-inch cork and has double windows and double doors.

The air in the test room is conditioned and circulated through the automatically controlled American Moistening air conditioning unit. This unit makes it possible to maintain any desired temperature between 65 and 85 degrees and any relative humidity between 50 and 100 per cent. De-humidification is made possible by the use of a refrigerating unit and cold water tank.

This laboratory will be used for educational and demonstration purposes by the Clemson Textile Department which has by far the largest textile enrollment of any school in the South and has a full time day enrollment equal to that of any textile school in America.

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are made through economies of operation rather than through wage adjustments.

Much importance has been attached to the points brought out by James A. Farrell in regard to wages in the steel industry, as applying to other industries. Where, as in the building industry, wages are so high as to obstruct new work and even necessary repairs, the workers are hindering recovery of business and hurting themselves. But in mechanized processes like steel, where as Mr. Farrell says, "we have liquidated our labor costs through greater efficiency," the reduction of wages most likely would chiefly lead to uneconomic pricing of products. Mr. Farrell says "it is not honest to sell steel below cost and take something away from stockholders and the wage-earners;" which, obviously, holds true of cotton goods.

It is the disarrangements between industries, rather than the internal affairs of one, which need rectifying for all to progress. Hugh Bancroft, publisher of the Wall Street Journal, expressed the case when he said substantially that the end of the depression depended upon an adjustment whereby prices that the final consumer will pay are made by the different producing agencies. Where this can be achieved only through wage reductions, those are essential. But Mr. Bancroft argued that wage cuts should be avoided "where they do not tend to bring about a reduction in retail prices or in the cost of living."

**Stabilization of Employment.**

INDUSTRY is coming more and more to the realization that it must move to secure stabilization of employment or suffer from Government interference. Employers cannot ignore the warnings that now point to political action, said James W. Hook, president of the Geometric Tool Company of New Haven, Conn., in a statement on behalf of the industrial committee, New England Council. "The gist of these warnings is that business generally, and industry in particular, must either accept responsibility for devising means of stabilizing employment, or arbitrary and compulsory measures, such as state unemployment insurance, will be imposed upon them."

For this reason the committee is urging upon manufacturers the need of recording the facts that will serve to define and measure the employment problem. This is recommended as a first means toward solution of the problem. "The business man," the committee states, "is trained to deal with facts. Without facts he is at a disadvantage in meeting the views of those who live chiefly in the world of ideas and are more quickly responsive to social trends." One of the things

of which a record is desired is the effect of the depression upon the hours of labor and weekly earnings of employees.

ANOTHER DEVELOPMENT in the efforts of the Cotton-Textile Institute and American Association for increasing uses and consumption of cotton goods is the announcement that on June 17th, members of the Corn Products Institute, which includes firms supplying starch to textile mills, subscribed to a policy of not making a price differential of two cents per bag, which previously existed, for shipping starch to mills in cotton instead of jute bags. Thus, mills using starch may secure it in cotton bags at the same price as for jute bags, and are being urged to specify cotton bags as a means of furthering the consumption of cotton materials.

**Cotton Bags for Starch Cost No More**

THE SUBJECT of using cotton bagging for baling cotton has been actively taken up by the American Cotton Manufacturers Association, through Cason J. Callaway, its president, and a number of leading mills, including those headed by Mr. Callaway, have announced willingness to make allowance for cotton baled in this manner. In other words, it is explained that the jute on a bale of cotton weighs around twelve pounds, while an all-cotton wrapping would average about four and one-half pounds. This gives a conservative average of seven pounds per bale less tare, if cotton is used instead of jute. If this cotton were sold without any recognition being made of this decrease in tare, the producers would lose this seven pounds, and the consumer would gain it.

**Cotton Bagging for Baling Cotton**

In a letter sent out as president of the American Association, Mr. Callaway explains the foregoing situation, and points out that, because of it, "the producers would like to know if the mills would be willing to pay for seven pounds additional cotton for each bale that is wrapped in cotton goods instead of jute.

"Decidedly the best way to handle this situation from the producers' viewpoint would be for cotton to be sold on a net weight basis, and I hope and trust that this can be done in the near future," Mr. Callaway continues. "Any other plan such as now under consideration is a make-shift, in that all of the producers who put up cotton in cotton likely would not get the benefit of this seven pounds, even if all manufacturers in America agreed to pay it, since such a large amount of cotton is exported and used for other purposes. However, it looks like that a net weight basis cannot be had by the time this crop is marketed, and since this request by the producers seems so reasonable to me, I am going to issue the following statement from the mills with which I am concerned:

" 'The ———— mills will pay for seven pounds additional cotton at whatever price per pound cotton is bought for if put up with 100 per cent cotton wrapping instead of jute wrapping, for the next cotton year or until July 31, 1932.' We will notify all of our suppliers of cotton to this effect."

Since the mills cannot lose by this agreement, Mr. Callaway points out, it would seem advisable to cooperate with the producer, and suggests that other mills make such an agreement. He lists as another advantage of cotton bagging the fact that cotton sticks to jute bagging, and in picking it off, some jute strings are mixed with the cotton, which materially lowers its value.

## What the Southern Mills are Doing

ANNISTON MFG. CO., Anniston, Ala., is installing 25 new Model "X" 40-inch looms, which they recently purchased from the Draper Corporation. These looms will be put into operation immediately following their installation. This mill also purchased two Universal No. 40 winders and two high speed Saco-Lowell warpers having magazine cone creels.

Sauquoit Spinning Mills, Inc., Gadsden, Ala., a subsidiary of Standard-Coosa-Thatcher Co., recently completed the installation of 28 combers and 8 new Whitin drawing frames.

Lanett Mill, Lanett, Ala., recently reported that they were overhauling their spinning frames with the Guillet overhauling system of the Dixie Spindle and Flyer Co., of Charlotte, N. C.

Humidifying equipment has been purchased by the W. A. Handley Mfg. Co., Roanoke, Ala., from the Bahnson Co., Winston-Salem, N. C.

The Trion Co., Trion, Ga., is adding two stories to its present plant in order to accomodate new machinery that will be installed. The company reports that it is necessary for them to operate some parts of the plant at night in order to take care of increased business.

Southern Brighton Mills, Shannon, Ga., recently purchased 750 Model "X" Draper looms. These will be used for weaving print cloths. Contract for 674 ¾-hp. Type AR loom motors, and control apparatus, was awarded to Allis-Chalmers Mfg. Co., Milwaukee, Wis.

The Callaway mill interests, LaGrange, Ga., have let contract for the construction of 11 new stores in three sections of Southwest LaGrange as the first step in a community improvement program.

The Beaver-Lois Mill, Douglasville, Ga., has added 160 employees, making a total of 320 employees working full time. The mill states that 10 more cards will be added just as soon as they can be installed.

The Canton (Ga.) Cotton Mills recently purchased an Armstrong roll covering unit to take care of cork rolls being installed in their mills.

Four Universal No. 40 winders to supply yarn for high speed ball warpers with magazine cone creels were recently purchased by Pepperell Mfg. Co., Lindale, Ga.

Bibb Mfg. Co., Macon, Ga., recently placed an order with the Carolina Specialty Co., of Charlotte, N. C., for 1,060 Veeder-Root duplex pick counters for equipping new looms recently bought for the Columbus (Ga.) plant.

Modena Mills, Gastonia, N. C., are contemplating installing new dyeing equipment, according to recent announcement.

National Weaving Co., Lowell, N. C., is installing complete water purification equipment for domestic and mill purposes.

Roanoke Mills Co., Roanoke Rapids, N. C., recently purchased an Armstrong roll covering unit to take care of cork rolls being installed in their mills.

It is reported that Southern Pile Fabric Co., Greenville, S. C., will erect a new spinning shed. The Gallivan Building Co., Greenville, are the contractors.

Contract has been let and work started on the addition to the plant of the Somerset Mills, located about three miles south of Roxboro, N. C.

J. Spencer Love and associates, of Burlington, N. C., have

purchased the mill building formerly occupied by the Gagner Mfg. Co., Statesville, N. C., and will equip the mill with Crompton and Knowles looms for the manufacture of rayon crepes and other rayon fabrics.

The Wade Mfg. Co., Wadesboro, N. C., recently equipped their plant with Boyce weavers' knotters.

F. W. Poe Mfg. Co., Greenville, S. C., has installed a Johnson rayon warp sizing machine, purchased from Carolina Specialty Co., Charlotte, N. C.

## New England Mill Situation

**June 18, 1931.**

PLANS TO CURTAIL production in fine goods mills during the summer months have been of principal importance in considerations of the New England mill situation of recent date. Fine goods mills throughout the New England states have been running on a maximum basis of 68 per cent of daytime capacity for a long period, but with the seasonal decline in business that usually comes in June and July it has been found necessary to further cut production in order to avoid accumulations of merchandise. A large number of the mills as a consequence will operate at a maximum of 60 per cent for this period, or until better demand allows of a return to the previous basis.

### Curtailment Plans for Summer.

Curtailment in many of the mills is and will be sharper than this maximum level, according to a number of individual producers. Many mills have refused to sell goods at a loss and where contracts have expired have preferred to shut down looms than to run them on end-of-season business on which fair prices could not be obtained. Mills making fancies also refuse to do so except on contract in the greater number of instances, and if fancies are not selling sufficiently to keep looms running, the producers see no advantage in replacing them with staples at the present low prices for such goods. The net result will probably be that production will actually be less than the maximum basis set.

### More Talk of Mergers..

There has been widespread talk of further consolidations and mergers of New England fine goods mills, but it does not appear that any definite action has been taken. There have been many mills mentioned by name in connection with such projects, but many of these declare that they have not been approached and that the rumors are without foundation. More recently it has been indicated that the Jerome A. Newman interests were considering taking further steps to consolidate mills in New England. Reports have been current that a new merger would be announced before the end of this month, but many disagreements seem to have entered from reports coming out thus far.

Of interest in connection with consolidations is the impending re-organization of Associated Textile Companies, in which William M. Butler is largely interested. Associated Textile Companies now owns all common stock of the Hoosac Cotton Mills of North Adams, Mass., and the New Bedford Cotton Mills Corporation. It owns the greater part of the common stock of the Butler Mill in New Bedford. The plan involves consolidation of these three constituents into a new company, the stock of which will be owned by Associated. Minimum new capitalization of $1,000,000 for the new organization is reported assured. Special meetings of the stockholders of the several companies are to be held shortly to consider thus linking themselves more closely together.

Of interest through the New England industry has been the paraphrasing by Ward Thoron, president of the National Association of Cotton Manufacturers, of the recent address of James A. Farrell, president of United States Steel Corporation. Mr. Thoron found that it was possible to substitute "cotton" for "steel" in Farrell's address and to draw an accurate picture of the cotton goods industry. "Diabolical price cutting", wasting of raw material, and producers no longer sellers, but allowing buyers to tell them what they would pay—were features of this announcement from the New England and southern mill executive.

In the matter of the marketing of the products of New England mills, the past month has been singularly lacking of features. There has been a dropping off in the volume of business. Many contracts are running out and buyers have not been purchasing ahead to any marked degree. An exception to this rule has been the plain marquisette trade where mills are very well sold ahead, their production through most of August being entirely taken up, and good volume being on the books for still later. Clipped and fancy curtain materials also have been active, but other mills have gone onto these goods, creating a production in excess of demand and injuring an otherwise improved market condition.

Many complaints are heard among the fine goods mill men with regard to the manufacture of rayon goods. Some leaders declare that they make few sales of goods of synthetic yarns without having claims made on the goods delivered that cause endless difficulty and friction. They admit the qualities of good rayon fabrics, but they state that buyers are prone to pick flaws which are often unjustified but nevertheless result in the necessity of allowing unfair claims. The stimulus given to cotton fine goods by the recent National Cotton Week is looked to by some of these as a way out of their dilemma, and many are planning more intensive production and merchandising of goods on which complaints and claims are less frequent.

A development of interest is the announcement that the Wamsutta Mills in New Bedford have concluded negotiations for sale through Wilson Brothers of Chicago of shirts and other garments made from special cloths. Carrying the Wamsutta label through to the consumer is a merchandising effort that is proving of benefit to this concern.

Three distributions have been made in a month to stockholders of the Bristol Manufacturing Company, New Bedford, making a total of $39 per share paid since Jerome A. Newman became president of the concern. Mr. Newman bought control last August at the rate of $39 per share. Not all assets have yet been realized upon, and the buildings are intact..

### Individual Mill Items.

A special meeting of Potomska Mill, New Bedford, stockholders is to be held shortly to consider cutting capitalization by buying in a part of the capital stock. There are 1,108 shares in the treasury, and 4,892 more are to be purchased to cut capital from $1,800,000 at present to $1,200,000, which was the capitalization before 1922.

The case of Sam D. Peril and Granoff, Providence cotton yarn brokers, against the Whitman Mills Corporation, New Bedford, a suit for $12,000 based on alleged loss of the brokers on a contract to sell 100,000 pounds of cotton yarn, has been settled out of court.

Several New Bedford concerns, particularly the tire fabric establishments, are shipping fabrics direct from New Bedford to Pacific coast ports. The fabric is shipped to tire factories of the Firestone company in Los Angeles from the New Bedford mill of the company, and other concerns are following suit.

Flint Mills in Fall River have paid an additional dividend in liquidation of $3 per share, bringing the total paid to $55 per share since controlling interest was acquired by Jerome A. Newman and associates at $45 per share.

American Printing Company in Fall River is reported to have considerably reduced the number of printing machines in operation. The cloth mills of the company at Fall River continue in operation, with a very considerable production of 80x80 and other print cloths. Other New England print works are also understood to have cut down their output considerably.

Harry S. Duckworth, general manager of the Cranston (R. I.) Print Works, and formerly of Hamilton Print Works in Lowell, Mass., has resigned due to ill health.

The Boott Cotton Mills in Lowell, towel and curtain manufacturers, joined with local stores in the promotion of National Cotton Week and in display of locally manufactured goods.

Lease with option to buy for $41,000 part of the Silesia Mill property in North Chelmsford, Mass., obtained by Bast Fibres, Inc., from the United States Worsted Corporation has been extended to September 15.

# Comment on the Cotton Market

**New Orleans, June 15, 1931.**

THE TREND of the cotton market, until recently, remained downward, new low prices for thus far this season and for about 16 years being recorded. Subsequently the cotton market recovered to the extent of about $2.50 per bale, influenced principally by a recovery in the stock market. Leading banks of New York lowered marginal requirements on collateral loans and some Wall street brokers lowered margin requirements on stocks, and there was an over-subscription to the government's large bond issue, while railroads are making an effort to have rates increased 15 per cent. These developments created a more cheerful feeling in the market for securities, which had a temporary favorable effect on cotton values. Some trade buying, price fixing, short covering and speculative support contributed to the advance.

But there was some uneasiness concerning German reparations, and of late weather conditions inland became more favorable for the growing crop. Temperatures were higher and showers, in some instances good rains, fell in many parts of the cotton region where moisture was claimed to be needed. Census domestic May consumption returns were disappointing, and the monthly domestic textile report was unfavorable. All of which occasioned an easier cotton market, values receding again. Compared with one month ago cotton contract prices show a decline of about $5.00 per bale.

**BRITISH BOARD OF TRADE REPORT FOR MAY**

| Year— | 1931 | 1930 | 1929 |
|---|---|---|---|
| Exports of yarn, pounds | 11,000,000 | 12,000,000 | 16,000,000 |
| Exports of cloth, yards | 141,000,000 | 218,000,000 | 321,000,000 |

**ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK MAY STATISTICS**

| Yards— | May 1931 4 weeks | April 1931 4 weeks | May 1930 5 weeks |
|---|---|---|---|
| Production | 225,392,000 | 225,955,000 | 275,801,000 |
| Sales | 160,029,000 | 137,749,000 | 184,473,000 |
| Shipments | 205,603,000 | 217,582,000 | 270,056,000 |
| Stocks | 301,943,000 | 282,154,000 | 450,481,000 |
| Unfilled orders | 248,544,000 | 294,118,000 | 271,745,000 |

May sales of domestic cotton goods were 71.0 per cent of production against 61 per cent in April this year and 66.9 per cent in May last year. Shipments were 91.2 per cent of production against 96.3 per cent in April this year and 97.9 per cent in May last year. Stocks at the end of May increased 7.0 per cent against an increase in April this year of 3.1 per cent and an increase in May last year of 1.3 per cent. Unfilled orders at the end of May decreased 15.5 per cent against a decrease in April this year of 21.3 per cent and a decrease in May last year of 23.9 per cent.

**CENSUS REPORT**

| United States— Bales— | This season | Last season |
|---|---|---|
| Consumption lint, May | 465,770 | 473,284 |
| Consumption linters, May | 66,949 | 67,201 |
| Consumption including linters, May | 532,719 | 540,485 |
| Consumption lint, 10 months | 4,365,042 | 5,321,582 |
| Consumption linters, 10 months | 583,710 | 686,672 |
| Consumption including linters, 10 months | 4,948,752 | 6,008,254 |
| Mill stocks May 31st | 1,258,222 | 1,527,858 |
| Stocks in pub. stg. & whs. May 31st | 5,494,025 | 3,379,414 |
| Stocks in mills, pub. stg. & whs May 31st | 6,752,247 | 4,907,272 |
| Active spindles during May | 26,397,906 | 28,357,908 |
| Active spindles during April | 26,645,404 | 28,851,122 |

**SECRETARY HESTER'S FIGURES MOVEMENT TO MARKET AND EXPORTS FROM UNITED STATES**

| Bales— | This season | Last season |
|---|---|---|
| Week's in sight (marketed) | 33,415 | 50,411 |
| In sight August 1 to June 12 | 13,812,934 | 14,833,370 |
| Week's exports, including Canada | 48,500 | 52,700 |
| August 1 to June 12 | 6,497,500 | 6,572,200 |

**SPINNERS' TAKINGS OF AMERICAN COTTON, BALES**

| | Th's season | Last season |
|---|---|---|
| Southern mills | 3,922,000 | 4,816,000 |
| North and Canada | 1,452,000 | 1,816,000 |
| Foreign | 5,624,000 | 6,276,000 |
| World | 10,998,000 | 12,908,000 |

**WORLD'S VISIBLE SUPPLY OF COTTON, JUNE 12**

| Bales— | This year | Last year |
|---|---|---|
| American | 5,896,991 | 3,717,783 |
| Other kinds | 2,453,000 | 2,655,000 |
| All kinds | 8,349,991 | 6,372,783 |
| Middling in New Orleans, June 12th | 8.43 | 13.65 |

For the week ending June 12th, spot sales at reporting southern markets were 17,163 bales versus 15,299 the previous week and 10,556 this week last year.

Garside estimated the world's consumption of American lint cotton during April at 995,000 bales versus 973,000 for March this year and 1,068,000 for April last year; for nine months, August to April inclusive, 8,346,000 against 10,235,000 for the same period last season.

As to the domestic cotton goods situation, the Hunter Manufacturing and Commission Co., New York, reporting for last week, stated: "Our sales have picked up considerably this week with prices showing still further decline. For the first time in a month our sales for the week are in excess of production. The volume this week exceeds that of any week since the first week in March, actually 50 per cent in excess of production. The greater part of the business done was on print cloths and sheetings and on fine and fancy goods. Further reports from the retail trade over the country confirm the story of large sales of cotton fabrics, but Worth Street district does not seem to have felt the result of these sales as yet in any particular improvement in demand for finished goods, and we would not say that the increase in our sales this week was due to National Cotton Week but rather in price appeal. As a matter of fact only a moderate percentage of the goods we sold during the week were headed for the retail counters. The largest sales were of constructions going in other directions."

Recently the National Fertilizer Association reported sales of fertilizer in 13 southern states, for six months, December to May inclusive, show a decrease compared with same time last year of 28.2 per cent.

Lately the New York Cotton Exchange Service reported sales of fertilizer tags, December 1 to May 31, as being 30 per cent smaller than for corresponding period last season.

The average of nine private estimates released recently indicate an average decrease in this year's cotton acreage of about 10.0 per cent, ranging from 7.8 per cent to 11.9 per cent. The government's first acreage estimate for this year will be released on July 8th next.

**TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES**

| Year— | 1931 | 1930 | 1929 | Normal |
|---|---|---|---|---|
| May | 2.41 | 5.15 | 7.70 | 3.71 |
| November to May inclusive | 17.75 | 16.96 | 21.45 | 17.06 |

Texas seems to have sufficient moisture for the present since returns, November to May inclusive, show somewhat more than normal, but May precipitation was comparatively light in that important state.

Washington's summary for week ended June 9th: "Temperatures averaged below normal in nearly all sections of the cotton belt, and the week was mostly fair with only limited areas with appreciable rain. It was the warmest week of the season, so far, over considerable portions of the belt.

"In Texas the warm weather was helpful and condition and stands are fair to good, and replanting is about completed; cotton continued considerably later than normal. The bulk of cotton is small and late in much of Oklahoma; but weekly advance was fair to very good, with cultivation and chopping progressing in the central and south portions.

"In the central areas of the belt the growth of cotton was fairly good, with warm weather favorable, though there is some complaint of poor stands and general lateness of the crop. Growth was poor in parts of Tennessee; and the late plantings and replantings have not germinated well in Alabama, due to dry weather.

"In Georgia stands are only fair and germination slow and irregular in north because of dry weather. In the Carolinas progress was mostly good, though locally the condition of cotton is only fair."

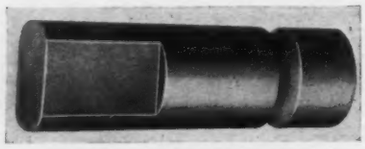
Meanwhile there have been beneficial rains in nearly all sections where moisture was needed.

Because of large stocks of old crop cotton in the South, and although the price is comparatively very low, it looks as though it will require some important change in the new crop outlook, or a revival in business, to create any activity of importance in the market which is now ruling quiet but steady at the decline.

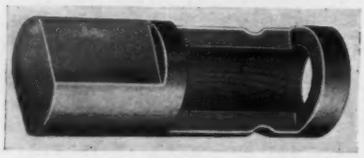
# New Textile Equipment and Publications

### Self-Lubricating Top Roll Bushings for Drawing Frames.

Saco-Lowell Shops, 147 Milk Street, Boston, Mass., have developed a self-lubricating top roll bushing for drawing frames, which, it is stated, eliminates the oiling problem at this point. This bushing, shown in the accompanying illustrations, consists of a wooden bearing enclosed in a steel shell. The wood is heavily impregnated with oil, and the wood acts as a reservoir for the oil, which is extracted by the



Self-lubricating bushing.



Cut-away view, showing wood lining.

roll gudgeon. The steel enclosure is to protect the wood bushings from damage and to promote the retention of oil in the pores.

The company states that an experimental installation of these bushings was run for ten months, 24 hours a day, with front roll speed of 550 r.p.m., and a 28-pound weight on each bushing. On one end of each top roll was a self-lubricating bushing, on the other a regular cast iron bushing. The cast iron bushings were oiled every day, and the self-lubricating bushings were not oiled at all. At the end of the test, it is pointed out, the self-lubricating bushings showed wear of only 1/1000-inch, the cast iron bushing nearly 3/1000-inch.

It is explained that the first few hours of running coats the gudgeon with a fine film of oil, which remains. A new gudgeon running in a wood bearing, it is stated, remains bright and does not discolor, and old top roll gudgeons gradually polish and assume a smoother surface. This device is to be standard equipment on all new drawing frames of the company, though it is adaptable to existing frames. When the bushings are installed on old rolls, it is advised, the gudgeons should be carefully wiped free of grease and oil, as ordinary oil and grease would clog up the pores of the wood and ruin the bearing surfaces.

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### Whitin's New Booklet On Spinning Frames.

Whitin Machine Works, Whitinsville, Mass., have just issued a new booklet covering their cotton ring spinning frames. The book illustrates and describes the regular spinning frames, as well as the Model F large package spinning frame, and the Whitin-Casablancas system of long draft spinning. The company's spindles, rings, and other spinning equipment are also covered in the pamphlet.

The company is also sending out copies of their picking catalog and the card-room equipment catalog, issued originally during previous years.

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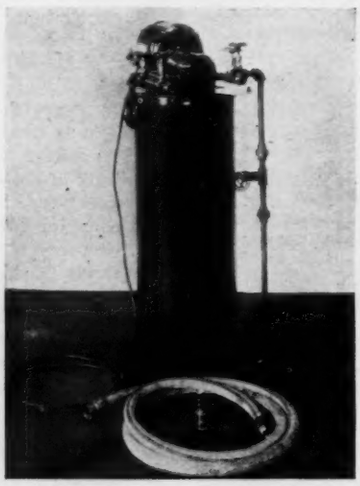
### New Machine for Mixing, Emulsifying and Spraying.

Herbert Hinckley, Incorporated, Charlotte, N. C., manufacturers of metering, mixing and spraying equipment, have announced a new Model 5B in their line of Whale machines. This new model, the company explains, is especially adaptable for mixing, emulsifying, and spraying oil and liquids of all sorts. The company points out



New machine in Whale line.

that in many mills it is necessary to change often from one liquid to another, or that it is desirable to pump the liquid from a main tank, and to mix and spray it some distance away. An especial application pointed out is in the dissolving and pasting of dyes, where a short run in the machine and final straining will suffice, eliminating several strainings. It is stated that in the machine every particle is given uniform treatment, the liquid being applied evenly; and that emulsions can be made with small quantities of stabilizer.

The model 5B, which is shown in the accompanying illustration, is electrically driven, by a ¼-hp. motor, and is mounted on the top of a 10-gallon tank. It has a mixing capacity of 3 gallons a minute. The machine is furnished complete with motor, spray and suction hose, spray-head and tank. It is portable, and may be supplied on casters.

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### "Definitions of Fair Trade Practices."

In co-operation with the Textile Converters' Association, The Association of Cotton Textile Merchants of New York has just published in booklet form "Definitions of Fair Trade Practices in the Sale and Purchase of Cotton Gray Goods for the Converting Trade."

These definitions, it is stated, represent one of the most important projects of its kind ever undertaken by trade associations representing sellers and buyers. The book defines under appropriate headings various practices in their relation to trade customs commonly accepted and repeatedly upheld in arbitration and legal proceedings. Definitions of such standard customs as the percentage of single and double cuts allowable on contracts; average length of single and double cuts; what constitutes a "second"; use of oil remover; tolerances for quantity, width, thread count and weight; rejections and claims, and many others are clearly set forth as fair trade practices and the ruling customs of the trade.

Copies of the booklet are available for distribution to interested members of the trade at the offices of The Association of Cotton Textile Merchants of New York.

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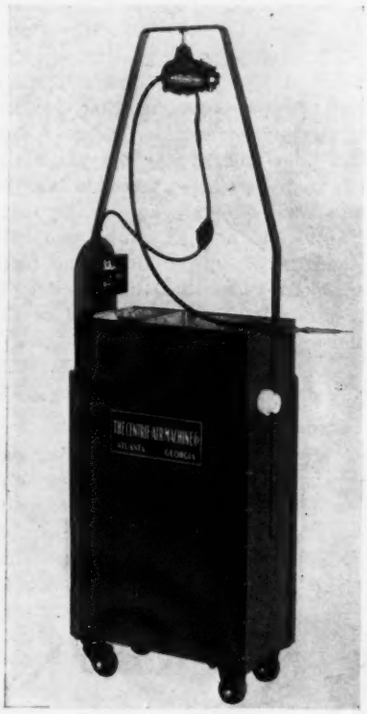
### Square D Power Filter Bulletin.

The Power Filter Division, Square D Company, 6060 Rivard St., Detroit, Mich., has just issued a new bulletin describing its new Power Filter Unit, which converts alternating current into pure, non-pulsating, humless, direct current. The company states the unit has innumerable applications where straight direct current is required.

### Electric Roll Picker for Long Draft Frames.

An electric roll picker, developed to meet the need for an efficient method of picking the rolls, journals, cots, saddles, etc., on long draft spinning frames, has been placed on the market by The Centrif-Air Machine Company, Inc., Atlanta, Ga. The picker is shown in the accompanying illustration. Essentially, it consists of a storage battery supplying power for a small motor which operates the flexible armored shaft and picking spindle, along with a simple device for dampening the smooth picking spindle so that it will pick the accumulated lint from the rolls, cots, journals, saddles, etc. The motor uses only three amperes an hour, and the battery has ample capacity to operate the motor continuously for 10 hours. A charging unit is included which will recharge the battery in 10 hours or less if necessary.



Electric Roll Picker.

The picker is mounted on rubber tired casters, and virtually no physical effort is required to move it along the alleys as the picking is being done, it is explained. The operator simply pushes it along with his hip, then turns the switch to admit current to the motor, and passes the spindle over the dampening roll and starts picking. When the spindle has picked off enough lint from the rolls, cots, journals, saddles, etc., to be fully covered, it is easily doffed by the thumb and forefinger of the right hand. A receptacle is built in the top for receiving the waste picked from the frames.

The manufacturers state that this development should be of interest to all mills using various types of long draft spinning, and that it provides a means of doing a better job of picking, and enables an operator to take care of more frames.

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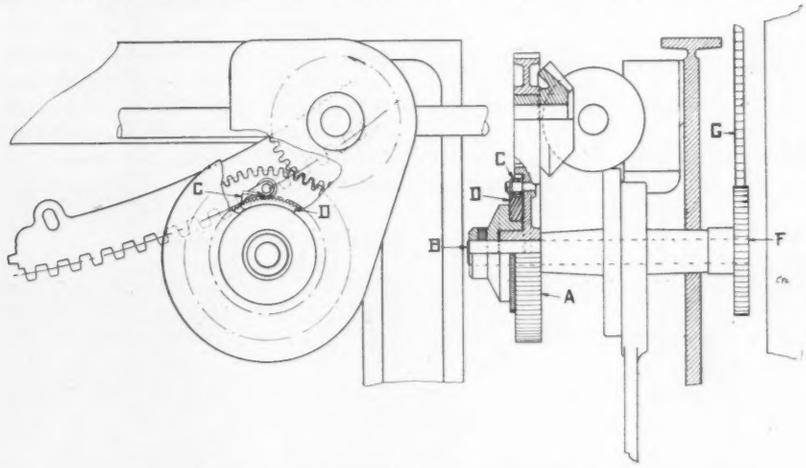
### Self-Releasing Device for Gear Driven Slashers.

To eliminate all undue stretching of yarn while being slashed, Saco-Lowell Shops, 147 Milk Street, Boston, Mass., have announced the development of a self-releasing device for gear-driven slashers.

It is explained that investigations on slashers showed that at times there is a tendency for the speed of the yarn to increase to an amount equivalent to a fraction of a tooth on the gear drive, and that when this condition arises, the yarn has a tendency to draw the cylinder against the gear drives. This of course would build up a considerable stretch in the warp, with damage to the yarn and at times to the gearing.




Self-Releasing Device for Gear-Driven Slashers.

In order to remedy this condition, the ratchet attachment in question was developed. As can be seen by reference to the illustration, the gear "a" is loose on the stud shaft "b". A pawl "c" is carried on a stud at the side of the gear "a". At "d" is a fine tooth ratchet keyed to the shaft "b". The gear "a" drives the cylinder through gears "f" and "g".

Thus, when the device is installed on a slasher, the cylinders will be driven by the usual gear drive through the pawl and ratchet. While the machine is being started and as long as the speed of the yarn is equal to the speed normally given to the cylinders by the gear drive, it is pointed out, the gears will drive the cylinder. On the other hand, as soon as there is any tendency for the yarn to drag the cylinder faster than the speed of the gear drive, the company explains, the cylinder will be free to revolve with the yarn, since the pawl will slip over the ratchet and disengage the gear drive.

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### Foxboro Bulletin.

A complete description of the units which compose a modern recording thermometer is given in the latest bulletin published by the Foxboro Company, of Foxboro, Mass., according to the company. This bulletin, a 40-page booklet entitled "Recording Thermometers", completely describes the vapor tension type and gas filled thermometers. It contains valuable engineering information on bulbs, sockets, helical tubes and instrument boards.

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### Rubber-Tired Wheels.

The Wellington Machine Co., Wellington, Ohio, recently published Catalog No. 51, which gives very complete descriptive material and information concerning rubber-tired wheels and casters for industrial uses.

In the introduction of the catalog, the company states that years ago they realized that the trend would be to rubber-tired rolling stock, and set out to design and build a line of rubber-tired wheels and casters which would stand up under the rigorous conditions encountered in industrial work, and, at the same time, decrease the amount of effort needed to move the heavy trucks of industry.

Years of experimental work were necessary before a wheel design was achieved which would fulfill all the requirements, but at last a wheel was produced which rapidly became known for its durability and performance, the company states.

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### How to Deaden Machine Vibrations and Noise.

This is the title of a new bulletin recently published by L. Mundet & Son, 461 Eighth Ave., New York City. The bulletin shows and tells how machinery

should be insulated by means of natural cork so that noise and vibrations will be eliminated. It offers an explanation as to why natural cork mats are preferable for machinery insulation; gives a table of sizes and shapes of Mundet natural cork mats; and also shows curves of compression tests on mats 1½-inch thick and 3 inches thick.

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### A New Invention on Drawing Rolls.

According to Paul B. Eaton, patent attorney, Charlotte, N. C., there was issued on June 9, 1931, a patent to A. M. Guillet of the Dixie Spindle and Flyer Co., Charlotte, which covers an interchangeable roller neck for drawing rolls, which comprises boring out the ends of the roll sections and inserting therein a roller neck threaded at each end to engage internal threads in the roller neck these threads being far enough in the roll to cause the rolls and roller neck to be in perfect alignment.

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### New Crown Gear Swing Stand for Roving Frames.

A new design of crown gear swing stand and stud has been perfected by Saco-Lowell Shops, 147 Milk Street, Boston, Mass., which, it is stated, enables the crown gear to be changed with little added work and practically as quickly as a draft gear change. The application, it is explained, is that when it is necessary to make yarns close to the theoretical number, a change in the hank or number, resulting from a change of one tooth in the draft gear, might be too much, and the new design makes it more convenient to change the crown gear.

As shown in the illustration herewith, the swing stand is open at the top. The stud carrying the crown gear and the draft change gear runs in a bearing, fitted to the stud, and secured by a thin lock nut with holes for a pin wrench. This thin nut bears against a steel washer. To change a crown gear, the thin retaining nut is loosened, permitting the whole draft and crown gear assembly to be removed from the frame.

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### Pontacyl Light Yellow GX.

According to E. I. Du Pont De Nemours, Inc., Wilmington, Del., Pontacyl Light Yellow GX is an acid dyestuff which produces bright greenish yellows. It is extremely soluble, level dyeing and fast to light.

It is slightly greener and brighter than Pontacyl Light Yellow 3G, and quite similar in properties, although faster to light and more level dyeing, the company states. It is emphasized that additions may be made to the boiling bath without fear of streaky results.

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### Squirrel Cage Induction Motor Publication.

The Westinghouse Electric and Mfg. Co., East Pittsburgh, announces the publication of Leaflet 20385-A, Type CS Squirrel Cage Induction Motors, which describes the new W-frame motor, which has interchangeable mechanical and electrical parts. Some of the many modifications and special applications of these motors made possible by the interchangeability of the parts are described and illustrated.

### Two New Dyestuffs.

Anthrene Navy Blue 3B Double Paste Fine and Anthrene Brilliant Violet 2B Paste Fine are two new dyestuffs recently placed on the market by Newport Chemical Works, Inc., Passaic, N. J. Both dyes are considered excellent for printing on cotton or rayon goods. Attention is also called to the exceptional fastness properties of both colors.

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### The Midget Flexible Coupling.

The Morse Chain Co., Ithaca, New York, recently stated that the increasing use of small couplings had demanded improved quality, and that to provide a small all steel quality coupling, they had brought out the Midget, a small flexible coupling that secured its flexibility through design rather than from use of flexible materials. It is pointed out that assembly is made so that any standard hub member, that is, any standard bore, can be used with either flat or cup section. The coupling is fully described in Bulletin No. 40, which is being distributed by the company.

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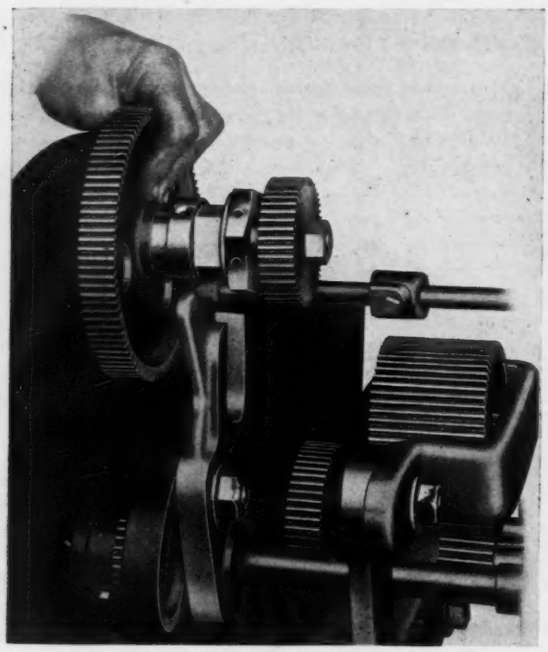
### New Portable Reel for Steel Strapping.

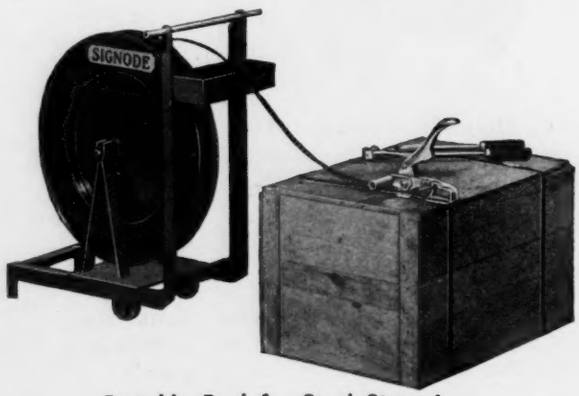
A strong dependable easy acting reel plays an important part in every shipping department, according to the Signode Steel Strapping Company of Chicago and New York. They state that this is especially true in connection with the use of tensional nail-less steel strapping.

To improve and speed up this feature of shipping department work, the company states they have designed and built a new reel that is of strong, sturdy steel construction that will stand all kinds of use and abuse without damage. It has light fast rolling casters for easy movement from place to place.

The new reel may be quickly reloaded with strapping by simply loosening



New Crown Gear Swing Stand for Roving Frames . .




Portable Reel for Steel Strapping.

COVINGTON MILLS

MANUFACTURERS OF

FINE SHEETING

COVINGTON, GA.
Jan. 29, 1931.

Saco-Lowell Shops,
Atlanta, Ga.

Dear Sirs:-

Referring to the Continuous Stripping Rolls installed on our cards last year. We have found that it is necessary to strip the doffers only once a week and the cylinders only before every grinding; approximately every 5 weeks. We also find that when the clothing is dull there is no appreciable difference in the work of the cards.

As to the waste we can not give an accurate statement of this, but our flat strips are not as much as before the installation, while our motes and fly have shown a great increase.

Due to not stripping we found that we get around a 2% increase in our card production.

We have also found that the strippers being added to the card have not increased the amount of power required to pull the machine, but due to the cleaner condition of the parts, have lowered it.

After summing up the above and adding the facts; that we have continually clean and more even slivers, due to non-stripping, we are able to say that the Continuous Stripping Roll is the greatest improvement that we know of being made to carding machinery.

Yours truly,

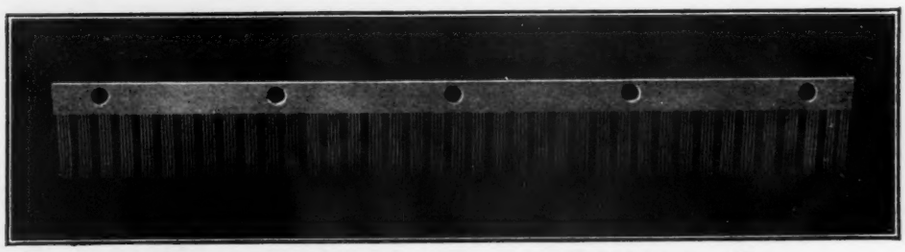
COVINGTON MILLS

Asst. Supt.

# More sliver *from* Less cotton

ELIMINATION of card stripping, with all its resulting dust and uneven work, is alone sufficient reason for using the Saco-Lowell Continuous Card Strippers.

In addition to this advantage, as much sliver is made from 98 bales of cotton as formerly from 100 bales, and it is definitely cleaner, smoother and more even. One mill estimates



*One of the needle bars, showing grouping of the lifting needles*

*This cylinder has been run 10 weeks with the Continuous Stripper. Note the thin sheet of stock and clean wire*

an annual saving of $13,400 from this source alone. The Sheffield Steel Lifting Needles of the Saco-Lowell Continuous Card Stripper accomplish these results, without any harmful effect on the life of the clothing.

The Covington Mills writes us:

"After summing up the above and adding the facts, that we have continually clean and more even slivers, due to non-stripping, we are able to say the Continuous Stripping Roll is the greatest improvement that we know of being made to carding machinery."

How this is accomplished is explained in a new book just issued. This book describes the card stripper, its construction and operation, and gives the results of tests in many representative mills. Any of our offices will gladly send you a copy if requested.

**SACO-LOWELL**

*Manufacturers of Textile Machinery*

**147 MILK ST., BOSTON, MASS.**

Charlotte, N. C. : Spartanburg, S. C. · Atlanta, Ga.

one bolt, and slipping the new coil onto the cylinder. A positive clip holds the strapping when not in use and avoids loosening or tangling. It is also pointed out that the hub is used for brake and that efficient braking service is assured.

The company states that the new reel which is made entirely of steel replaces the old wooden equipment to every good advantage, both as to speed and length of service.

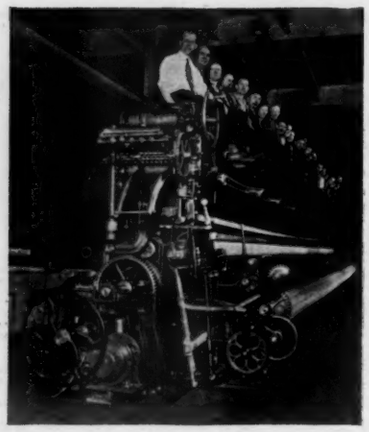
:: :: ::

## Crompton and Knowles Make Widest Loom In Its History.

Crompton and Knowles Loom Works, Worcester, Mass., has just completed the manufacture of the widest loom in its history, the proportions of which are indicated in the accompanying illustrations. This loom was made to weave conveyor belts for use in paper making machines. In the gigantic machines which manufacture paper, the pulp, in one operation, is carried from the forming wire in a wet state through several pairs of press rolls. The standard conveyor felt for this operation is woven from high quality woolen yarn and the felt must be endless. Consequently, the demand has been for a loom that will weave tubular woven goods which can be formed into an endless conveyor belt and then threaded onto the paper making machine without any splicing.

The loom built by Crompton and Knowles to meet a recent demand for this material is 540 inches between swords. It is known as a 2 x 2 box, 12 harness, Type A felt loom, and is capable of weaving a tubular material having a circumference of 1040 inches. The accompanying photographs show the loom on the erecting floor. In one of the illustrations, 24 men are

**The largest C. & K. loom ever made, 650 inches over all, and 540 inches between swords . . .**



**Twenty-four men sitting on the arch of the largest C. & K. loom.**

sitting on the arch.

The heavy, all-steel, bridge construction of the arch is particularly interesting. This arch is unsupported except at the end. The harnesses are operated by a Knowles head motion. The breast beam, arches and the 15-inch diameter take-up roll are manufactured in one continuous piece.

Two 3-hp. motors, one at either end, operate the loom at a speed of 30 picks per minute. There are seven crank wrists. The 28-inch shuttle travels at a speed of approximately 35 miles per hour. The shuttle is thrown as in any other Crompton and Knowles loom, except that there are elliptical gears driving the picking roll and thus imparting a sharper motion to the picker stick.

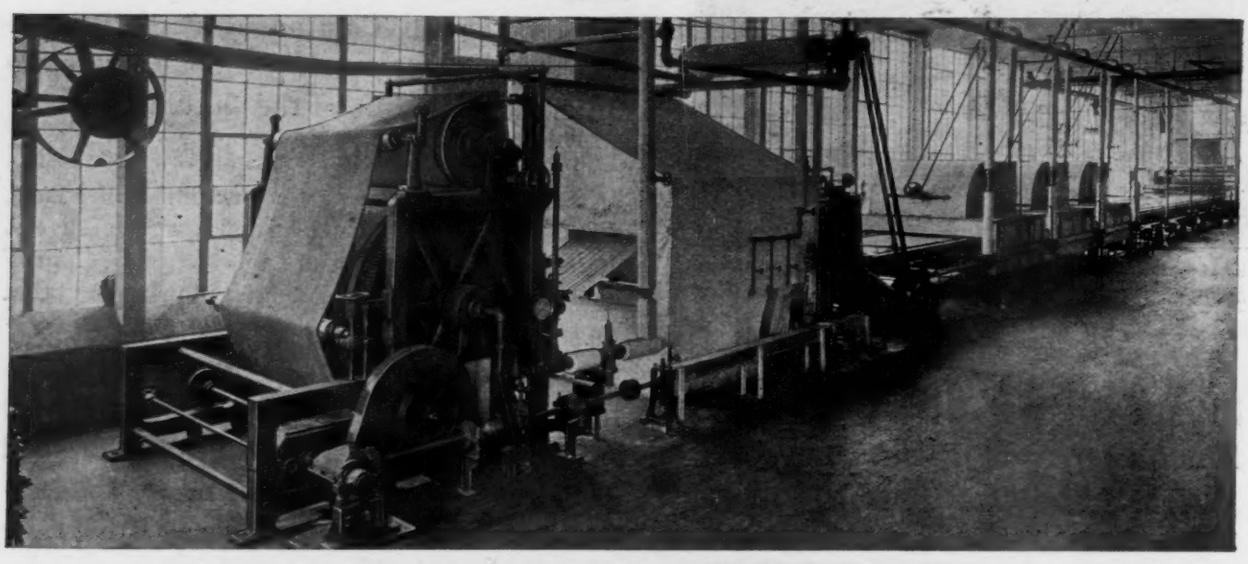
The over-all length of the loom is 650 inches, with a depth of 101 inches. The height from floor to top of arch is 100 inches. In the same space as occupied by this one loom, could be put five 82-inch high speed worsted looms or seven 52-inch super silk looms. The approximate weight of this loom is 20 tons.

:: :: ::

## Butterworth Making Complete Sanforizing Units.

Since H. W. Butterworth & Sons Co. have been licensed by Cluett, Peabody & Co., of Troy, N. Y., owners of patents on the Sanforizing machine, which permits cloth to be shrunk to any predetermined degree, they have built four of these complete Sanforizing ranges, consisting of padding machine, pin chain tenter, atomizer, steamer, take-off pad, second atomizer and steamer, compensator, ironer, blanket finishing machine, and folder.

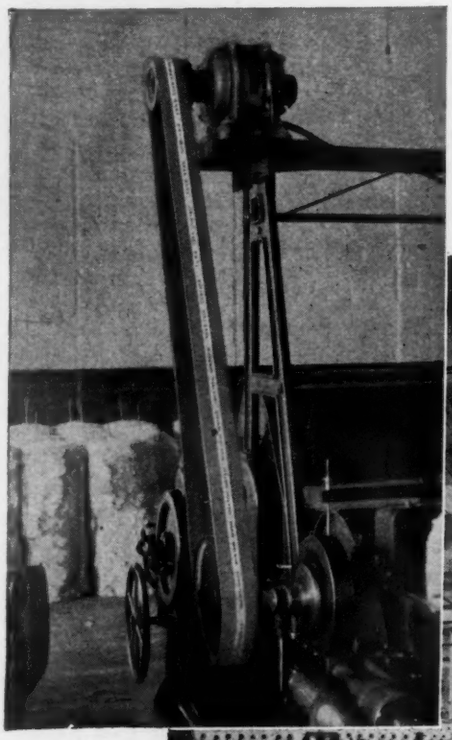
In the illustration may be seen the delivery end of the Butterworth Sanforizing unit, with the goods entering the blanket finishing cylinder after having gone through the various other operations, beginning with the padding machine.

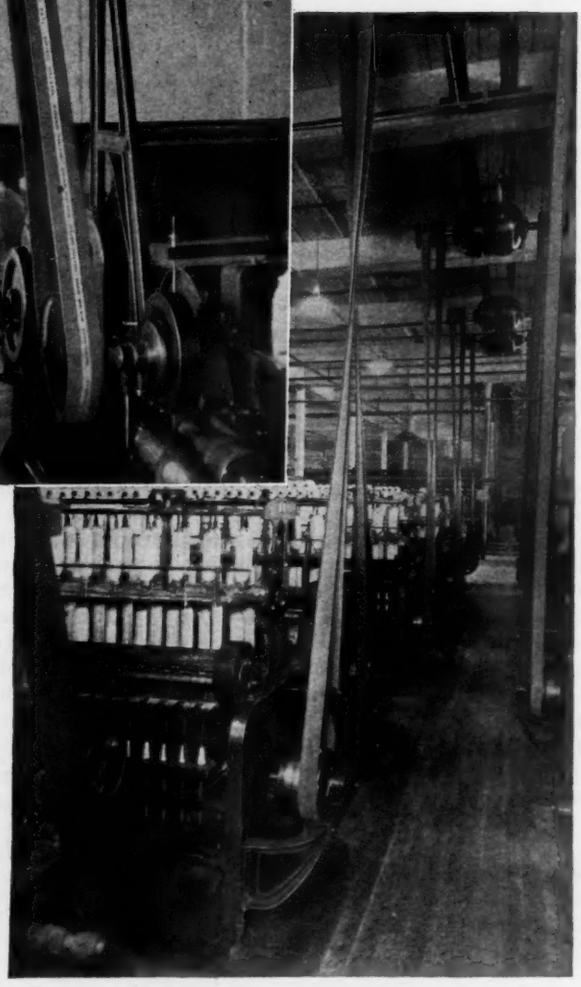


**Butterworth's Sanforizing Unit.**

# TWO TEXTILE MILL BELTS

## now reduce the toll of *stretch* and *fray*





IT was found in Goodyear's own fabric mills that ordinary belting was costly on textile machinery. For certain machines a new belt of absolutely minimum stretch was needed. For others, just as requisite was a belt that would not easily fray under shifting, nor rip from structural fault on a central seam.

And so we built the Goodyear COMPASS (Cord) Endless Belt—the most nearly stretchless transmission belt made. It was developed for individual motor drives on Vertical Openers, Pickers, Lappers, and Twisters. It is the only truly endless belt. COMPASS is made of cords laid side by side, bound with rubber, and enclosed in a fabric envelope that is double on the pulley side. The tensions are carried in the cord—the wear is taken on the cover.

Also, we built the Goodyear THOR Belt, seamless*, a textile belt with protected edges. There is no central seam in this belt—no place to rip. The belt is guarded with a covering envelope—the edges are sealed against fray under constant shifting. On Cards, Frames, Slubbers, Spoolers, Looms, Slashers, and Breakers, this seamless Goodyear THOR Belt is a standard specification for long wear and low replacement costs.

Goodyear has saved money in its own mills on these two fine belts. They will save money in yours. Let the G. T. M.—Goodyear Technical Man—tell you about them. He knows the specifications for each of your drives. Just write to Goodyear, Akron, Ohio, or Los Angeles, California, and ask the G.T.M. to call.

**Goodyear THOR Belting, seamless, is made in widths up to and including 16"—THOR quality of special construction is available for larger sizes*

THE GREATEST NAME IN RUBBER

GOODYEAR

TEXTILE • BELTING

# NEWS ITEMS *with a Textile Slant*

### Boston Sales Offices of Armstrong Cork Consolidated.

Effective June 15, all of the Boston branch sales offices and warehouses of the Armstrong Cork Company, manufacturers of linoleum, insulation materials, and cork products of all kinds, were consolidated in one office located at 286 Congress St. Heretofore, separate offices have been maintained for each of the four divisions. The Temlok dealer sales division, a division recently organized for the sale of Armstrong's Temlok Insulation, will also be located at the new address.

:: :: ::

### Beginning Another Century.

On July 21 the Philadelphia Quartz Company will officially mark its entry into the second century of business. On that same date in 1831 a factory was founded by Joseph Elkinton in Philadelphia for the manufacture of soap and candles. For 30 years these were the chief items of the plant, but in 1861 there was begun the manufacture and sale of a product which was destined to displace the others and to become commercially important, according to the company. Over a period of years, the soap and candle end of the business was gradually overshadowed by the growing production and sale of silicate. In 1904, soap production ceased and soluble silicate became the exclusive product of the company.

:: :: ::

### Robert Gair Adds Research Engineer.

Arno W. Nickerson, who has been active in process development in the paper industry for a period of years, has joined the research engineering department of the Robert Gair Company, 420 Lexington Ave., New York City. Since 1917, Mr. Nickerson has been associated with Process Engineers Inc., of 501 Fifth Ave., more recently as treasurer and director. He has served as consultant on paper to chemical companies supplying the paper industry and has specialized in development work in connection with paper manufacture.

The research engineering department of the Robert Gair Company, of which J. D. Malcolmson is manager, is devoted to the development of new products and is in general charge of maintaining the quality of fabricated products made by the company.

### Takes On Additional Territory.

Northern Equipment Co., Erie, Pa., announces the appointment of Joseph W. Eshelman as representative for Copes feed water regulators, pump governors, differential valves and allied equipment in Eastern Tennessee. This is an extension of the territory formerly served by Mr. Eshelman from his offices in the Webb-Crawford Building, Birmingham, Ala.

:: :: ::

### Du Pont Exhibit.

An early summer display showing the steps in the manufacture of rayon featured a recent boardwalk window display of the Du Pont exhibit in Atlantic City. The feature formed the background for a display of Munsingwear undergarments made of rayon. It consisted of samples of the material in its various stages, including the spruce wood, wood pulp, spinning solution, filaments and the finished yarn. A spinneret, which changes the solution or viscose into delicate filaments that are twisted together to form a single thread, formed an interesting addition. Each step in the manufacture was explained by means of placards.

:: :: ::

### Mundet Adopts New Sales Name.

Announcement is made by L. Mundet & Son, 461 Eighth Ave., New York City, that hereafter its selling organization throughout the United States will be operated under the name, Mundet Cork Corporation. In view of the fact that the company specializes in the cork business, it was decided that the word cork should appear in the name used by the sales organization and that a change in name will benefit everybody concerned.

L. Mundet & Son further announce that there will be no change whatsoever in its sales policy, and that all transactions covered by Mundet Cork Corp. will be fully guaranteed, as in the past, by the parent company, L. Mundet & Son.

:: :: ::

### D. R. Weedon Resigns.

D. R. Weedon, who has been connected with Hungerford & Terry, Inc., Clayton, N. J., in their Boston office, recently resigned. He is to be succeeded by H. R. Myers, who for the past several years has been chief engineer of the company. Mr. Myers will have charge of the New England territory, and will continue the company's past service to its New England customers, the company states.

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### Medals Awarded at Clemson.

T. I. Dashiell was presented with the medal awarded by the National Association of Cotton Manufacturers by Dr. Sikes, president of Clemson College, on June 2. The medal is awarded to the student in each year's class who makes the most outstanding record in the textile department for that year.

The Textile Colorist Gold Medal offered in the textile chemistry, rayon, and dyeing division of the textile school was awarded to Roy L. McGee, of Belton, S. C., for general excellence of work, special effort, and high grades.

:: :: ::

### A New Product.

Laurel Delustro is a new development of the Laurel Soap Manufacturing Company, Philadelphia, which has proven satisfactory in delustering silk hosiery. The company states that the product is very easily used, and that a widespread demand for it is anticipated.

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### Real Silk's Philadelphia Mill Moved to Dalton.

The Real Silk Hosiery Mills, Inc., of Indianapolis, Ind., have announced the removal of their full fashioned machinery from their Philadelphia plant to their plant at Dalton, Ga. The entire equipment of 44 knitting machines together with auxiliary equipment of winding machines, etc., will be shipped immediately. These machines should be ready for operation between August 1st and 15th, it is stated. The plant is to run the machines night and day.

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### More Full Fashioned Parts For Torrington.

From the Torrington Company comes news that they have doubled their equipment of full fashioned parts. This expansion of facilities, they state, indicates good business, as they have realized a steady increase in the reneedling activities at the new Torrington re-needling plant in Philadelphia.

:: :: ::

### H. H. Rankin Wins National Association Medal.

The medal awarded annually by the National Association of Cotton Manufacturers to the member of the graduating class at North Carolina State College who has done the most proficient work in the textile school, was

WE strongly urge that you use only H & B Replacement Parts in reconditioning your H & B Equipment. They promise lowest ultimate cost, reduce necessity for frequent repairs and keep equipment functioning at highest efficiency.

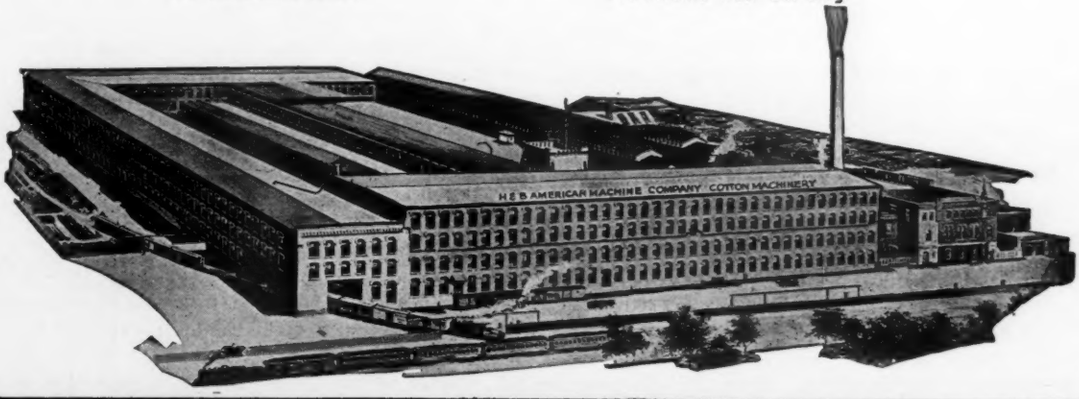
No round-the-corner shop or jack-of-all-trades can duplicate H & B parts. Our modern equipment, automatic machines, metallurgical specifications and standards of accuracy assure fit and continued trouble-free operation. When ALL costs are accurately figured, you will find H & B parts cheapest and best.

## H & B AMERICAN MACHINE CO.

PAWTUCKET, RHODE ISLAND

BOSTON OFFICE
161 Devonshire Street

ATLANTA OFFICE
815 Atlanta Trust Co. Bldg.




· USE ONLY H & B PARTS IN H & B EQUIPMENT ·

presented to H. H. Rankin, of Gastonia, N. C., by Walter C. Taylor, secretary and treasurer of the Southern Textile Association.

:: :: ::

## Fisher Governor Celebrates Fiftieth Anniversary.

Fisher Governor Company, Marshalltown, Iowa, is this year celebrating its fiftieth anniversary, having been in continuous and successful operation since it was incorporated as a company in 1881. The organization was formed originally as a partnership by Mr. William Fisher, the original inventor of the pump governor, and Mr. George Beebe. The ideas employed in the first constant pressure pump governor as developed by Mr. Fisher have been the basis for developing many other fluid control devices. Having developed the pump governor and the pressure reducing valve for the steam industry, the company naturally expanded along similar lines, including lever valves, exhaust valves, back pressure valves, steam traps, and various adaptions of these devices. They also have entered the field of manufacturing automatic control specialties for other leading industries including textile, oil, gas, chemical, etc.

Plant of Fisher Governor Company, Marshalltown, Iowa.

In commemoration of the anniversary, the company has distributed a very attractive booklet entitled "Fifty Years of Leadership". This brochure gives a brief history of the business, and shows views and gives descriptions of various departments in the plant at Marshalltown, Iowa, which is shown in the accompanying illustration. In addition, the book illustrates and describes the Gra-Iron Foundry Corporation, which is the source of Fisher's iron, semi-steel and Fisco metal castings; and the Kiowa Corporation, which casts Monel metal, aluminum, Duromite-Bronze, and other special valve metals, and is a source of raw material for Fisher valves. These organizations, located close to the Fisher plant, are connected with the Fisher Governor Company through interlocking directorates. The book also shows views of various tests used in the company's plant, and illustrates some of the varied lines of power plant specialties produced by it. A description is also given of the Apex Regulator Co., which was acquired by Fisher in 1929, and which manufactures a line of automatic controlling specialties, supplementary to the heavier and more complete Fisher line.

An announcement of interest in connection with the company's fiftieth anniversary it that of the opening of a new branch factory in Los Angeles, California, which will eventually carry a complete stock of Fisher specialties for better service to companies on the Pacific Coast. Machines are being installed to facilitate immediate machining and repairing of all of the company's automatic control devices. This factory will be under the immediate charge of Jasper H. Fisher, chairman of the board of directors, and Ray McCoy, factory manager, who formerly was an inspector at the Marshalltown plant for 18 years, and Forest Wehrman will be in charge of the office and accounting department.

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## Du Pont Moves Sales Offices.

On June 20th, the executive and general sales offices of Du Pont Rayon Company, Viscose and Acele departments, and Du Pont Cellophane Company, Inc., were moved to the Empire State Building, 350 Fifth Avenue.

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## Honor Students at Ga. Tech.

The honor students among the graduates of the A. French Textile School of the Georgia School of Technology for the past year were: W. M. Mitchell, of Summerville, Ga., winner of the National Association of Cotton Manufacturers medal; J. H. Asbury, of Clarkesville, Ga., winner of the Georgia Association of Cotton Manufacturers' gold medal (the best all-around textile work in the four-year course); and J. C. Prewett, who won the gold medal offered by the Textile Operating Executives of Georgia for the best scholastic standing among the two-year students.

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## Reed Company to Open Plant in Charlotte.

George A. McFetters, president and manager of the Greensboro Loom Reed Company recently announced that his firm will open a branch plant in Charlotte, N. C., soon.

The Greensboro Loom Reed Company specializes in the manufacture of reeds for the weaving of fine rayons and silks. The company states that the Charlotte branch is being opened to give quicker and more efficient service to those textile weaving plants further South.

It is stated that wire polishing and rolling equipment has been built in the company's own machine shop, while reed making machinery has been imported. All machinery is now in operation and being thoroughly tested in the Greensboro plant before moving to Charlotte.

The Charlotte branch will be in charge of E. J. McFetters, who for the past several years has been superintendent of the Greensboro shop. H. F. Harrill, who has represented the Greensboro Loom Reed Co. for several years, will move his residence to Charlotte to enable him to be in closer touch with the plant and customers. The company will be located in the Bostick Building.

:: :: ::

## A New Temple Roll.

The Steel Heddle Mfg. Co., Philadelphia, Pa., state that they have recently introduced something new in the form of a temple roll among the silk and rayon mills and the light cotton fabric mills of the North.

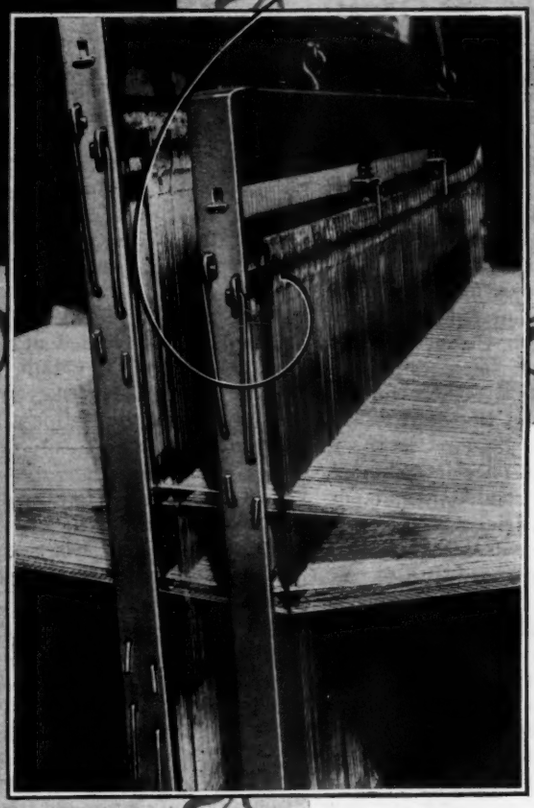
The roll consists of a threaded-surface cylinder of specially compounded cork. It is pointed out that cork has a strong holding or gripping surface and the threaded surface adds to this gripping power to an unusual degree. It is claimed that the roll will not allow the fabric to draw in, and will not cause pin holes or defects in the material woven. The roll is specially designed for silk, rayon and fine cotton weaving only.

:: :: ::

## Power Transmission Appliances.

T. B. Wood's Sons Company, Chambersburg, Pa., recently published Bulletin No. 373, which gives specifications and data pertaining to numerous power transmission appliances. The company is gladly distributing the bulletin to interested parties.

# The New Double Bar Staggered Harness for Weaving High Count Cotton Fabrics



## A Distinct Development in Modern Loom Equipment

**The super finished rust-proof heddle with a proportionately lighter frame, allowing maximum performance with an end breakage of less than four ends per day is convincing proof of its superiority.**

**Other outstanding advantages are:**

**1—Actual increase in production of over 10%.**

**2—Less seconds.**

**3—Greater number of looms can be handled per weaver with resultant increase in operator's earning power.**

**Decreased cost per lb. of finished cloth.**

**4—Cuts overhead considerably.**

*Let us tell you what other successful aggressive plants are doing. Send for information.*

The Finest Quality Obtainable in Harness Equipment
HEDDLES
FOR EVERY TYPE MATERIAL BEING WOVEN
FRAMES
MADE IN ANY SIZE TO FIT EVERY TYPE LOOM
REEDS
PITCH BAND AND SOLDERED MADE IN ANY SIZE DESIRED
DUAL SLIDE HOOKS
LOCK HOOKS
REPAIR HEDDLES
PILE GAUGES
CREEL TENSION WEIGHTS
DROP WIRES
LINGOES
ETC., ETC.

Steel Heddle Mfg. Co.

2100 W. Allegheny Ave.,
Philadelphia, Pa.

| *Southern Plant* | *New England Office* | *Foreign Offices* |
|---|---|---|
| 621 E. McBee Ave., Greenville, S. C. | 44 Franklin St., Providence, R. I. | Huddersfield, Eng. Shanghai, China |

# NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

**J. W. Hames** became superintendent of the Shelbyville Mills, Inc., Shelbyville, Tenn., last month, succeeding E. T. Combs. J. W. McElhannon, of Huntsville, Ala., is general superintendent. Mr. Hames was previously superintendent of the Exposition Cotton Mills, Atlanta, Ga.

**J. M. Droll** recently joined the service department of Industrial Rayon Corporation. Mr. Droll has a background of intensive and varied experience in the knitted underwear field, having been superintendent of knitting for the Weil Kalter Mfg. Co., St. Louis, also at their plant at Sparta, Ill. Previous to this he had been first assistant foreman of knitting at the Munsingwear Corp., Minneapolis.

**W. A. Erwin, Jr.**, assistant secretary and treasurer of the Erwin Cotton Mills Company, West Durham, N. C., died on June 5th, at Hot Springs, Ark. Mr. Erwin, who had been in Hot Springs for some time receiving treatment for neuritis, developed pneumonia and died suddenly. He had been with the Erwin Cotton Mills since his graduation from the University of North Carolina in 1916, having served as manager of two of the mills.

**J. C. McQuiston**, general advertising manager of the Westinghouse Electric and Manufacturing Co., retired from service on June 1st. In his decision to retire he brought to an end a record of continuous advertising administration for one company probably unparalleled in American industry. For 29 years Mr. McQuiston had been in charge of advertising for Westinghouse Electric, during which time the status of advertising and sales promotion, distribution and other allied phases of his profession encountered many changes. His activities will be remembered by the old time advertising men for his slogan, "Advertising must be truthful", and by the modern group for his equally well known tenet "Advertising and selling must go hand in hand".

Mr. McQuiston.

**A. D. Radcliffe** has been made superintendent of the Real Silk Hosiery Mills, Dalton, Ga.

**George F. Brooks**, manager of the service department of Industrial Rayon Corporation, Cleveland, Ohio, has been elected vice-president in charge of service of that company, Mr. Brooks joined the staff of Industrial Rayon in January, 1926, and one of his chief accomplishments has been the introduction and perfection of Industrial's coned yarn business. Previous to becoming connected with Industrial Rayon, Mr. Brooks was with Munsingwear Corporation, Crawford Manufacturing Company, Scott & Williams and Strutwear Hosiery Mills.

**L. A. Wolin** has been elected vice-president in charge of sales promotion and advertising of the Industrial Rayon Corp. Mr. Wolin has been with the company for a year and a half, during which time he has been assistant to the president.

**D. F. Long**, formerly with the Southern Mfg. Co., Athens, Ga., has succeeded C. B. Sharpton as overseer of weaving at the Elberton (Ga.) Cotton Mills.

**A. G. Myers**, prominent mill executive of Gastonia, N. C., has been elected president of Textiles, Inc.; J. H. Separk is first vice-president; C. C. Armstrong and J. L. Gray, vice-presidents; and A. K. Winget, secretary and treasurer.

**Hugh Black**, who has been with the Greensboro office of the Detroit Graphite Company, has been placed in charge of the Greenville (S. C.) office, where he will have charge of the company's business in South Carolina, Georgia and Tennessee. He succeeds Hext M. Perry, who recently resigned to become purchasing agent for a group of mills.

**George H. Small** has become connected with the National Oil Products Company, Harrison, N. J., and will represent the firm in Louisiana, Mississippi, Alabama, Florida, Georgia, and South Carolina. His headquarters are at 310 - 6th Street, N. E., Atlanta, Ga. Mr. Small for the past 15 years has been connected with E. F. Houghton & Company, and for the past few years represented them in the Atlanta office. R. B. (Bert) Macintyre has also become associated with the National Oil Products Company and will represent them in North Carolina and Tennessee.

**Louis L. Okey** died at a hospital in Charlotte on May 18th, following a short illness. Mr. Okey was a representative of the National Oil Products Company, and his very pleasing personality won him a large host of friends during the nine years he was in the South.

**R. W. Rearden** has accepted the position of overseer of weaving at the Seminole Mills, Clearwater, S. C.

**W. A. Hope**, of Rockingham, N. C., was recently appointed superintendent of the two print cloth plants of the Republic Cotton Mills, Great Falls, S. C.

**E. J. Walden**, for the past year night overseer of spinning, spooling, twisting and winding at the Caroline Mills, Inc., Carrollton, Ga., has been made superintendent of these departments.

**H. E. Overcash** has been promoted to day overseer of spinning at the Caroline Mills, Carrollton, Ga.

**D. E. Trask**, formerly with Walcott & Campbell Spinning Co., Gulfport, Miss., is now overseer of carding at the Texas Textile Mills, McKinney, Texas.

**L. F. Ancott** has been appointed superintendent of the Scottsboro Hosiery Mills, Inc., Scottsboro, Ala.

**Harda Crowe** is now superintendent of the Anniston Yarn Mills, Anniston, Ala.

**H. H. McGee** has been made head of the carding, spinning and dyeing departments of the Blair Mills, Belton, S. C.

**J. W. Rowell**, formerly overseer of carding and spinning at the Saratoga-Victory Mills, Inc., Albertville, Ala., is now holding a similar position at the Guntersville (Ala) plant of the same corporation. He succeeds L. P. Bell.

**Sam Lovelace** was recently made overseer of rayon weaving at the Dunean Mills, Greenville, S. C.

**W. F. Hunt** is now master mechanic at the Mills Mill, Greenville, S. C.

In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Some Random Thoughts

*The best overseer is the one who can develop the best in his section men and operatives.*

* * *

**No overseer or superintendent will ever get his highest production until he wins the confidence of his operatives.**

* * *

*Pity the overseer or superintendent who has to be hard-boiled in order to cover up his ignorance.*

* * *

**No man can command his best judgment when he is excited. Don't get excited.**

* * *

*The man who thinks everybody is against him should think more about his methods, his attitude toward others, and see if it isn't HE who has it in for everybody.*

* * *

**Selfishness has cost many a man his chance for promotion.**

* * *

*For goodness' sake, keep your temper—no one else wants it.*

* * *

**It is not so important how far up the ladder of success you are, but the important point is, have you stopped?**

* * *

*To borrow money is sometimes difficult, but you can borrow trouble without interest or collateral.*

* * *

**To help a man who will help himself is easy—but to help a man who will not co-operate is impossible.**

* * *

*My idea of a lazy man: A fellow standing at a revolving door waiting for someone to turn it so he can walk through.*

* * *

**When any man feels he is a part of the outfit—that he is going to get full credit for what he does—then if he doesn't co-operate he should be man enough to quit.**

* * *

*That section man who, you know, works like H— when you are looking and loafs all he can when you are away—do you think he would make a good man to put over others? You know which section man that is, don't you?*

*Well, I'm just wondering what your boss—(you can finish the sentence.)*

* * *

**Many overseers and superintendents are too darn selfish to try to help the man above them—not realizing that if he "steps up" it opens a place for them to "step up".**

* * *

*You've heard 'em say "I never had a show".*

*Yeah, he is the kind of fellow who is always waiting for a complimentary ticket. If he would apply himself to his work—study his work—buy every book he can find pertaining to his work and get all he can out of them—if he had the backbone to do these things, he would not have to say, "I never had a show".*

* * *

**When the time comes to lay off men who gets laid off? Of course you know how to answer that question—every overseer and superintendent does. But had you really asked yourself which class YOU are in? Are YOU the best man on the job?**

* * *

"It pays to advertise" is a well known axiom. Most any overseer or superintendent will agree that there is much truth in that saying. Then may I ask: what are you doing to advertise what you are selling? You are selling your services, aren't you? How are you going to advertise service? By running your job better than other men are running the same kind of job.

You do not have to print a sign and hang it on your back for people to find out you are a more competent man than other men in your line. You know which are your best section men, don't you? You know which are your best weavers, your best spinners. You even know which negro is the best scrubber, but you don't seem to realize that the superintendent knows which is the best overseer. The manager knows which is the best superintendent. The president knows which are the best managers. You can bet your bottom dollar that the man over you has you classed just like you have classed the men under you.

* * *

**The biggest one asset any man can have, be he merchant, lawyer, doctor, preacher, business man or textile man, is the ability to form IDEAS.**

**Ideas, new ideas or improvements on old ideas are the basis of all progress. New ideas will boost your production—new ideas will lower your cost—new ideas will improve the quality of your product.**

**New ideas will finally raise your pay.**

* * *

*If the average man could only realize the value of the other fellow's experience, he would profit more by it. The trouble is that so darn many of us think we have more sense than anyone else that our egotism prevents us from taking advantage of this wonderful source of profit.*

*I know of many specific instances where a man has worked years to perfect an idea, and then has seen another man go through the same experience of years of study and work to find out the identical same thing, just because he was too blamed hard-headed to let the other fellow tell him.*

* * *

**How many chances have you of success, one or one hundred? It depends on whether you have one or a hundred ideas for solving the problems ahead of you.**

## Marks of Good Management

THE MOST essential characteristic of management is organization. If management is right its organization is right. No need to go further to find the qualities that make for success.

Personality shows on the surface. Spirit and morale can not be hidden. Every detail of business transactions expresses their presence, or their absence.

No greater tragedy in business life than the failure of able, honest and potentially successful men. Modern Accountancy sees these failures often and emphasizes them as quite unnecessary. Success is not to the superman alone. Most often it comes from a right concept of organization and the application of a well-ordered plan. Every day, normal business intelligence discovers, and understands better these truths; and so is achieving more fully the results that mark good management.

# ERNST & ERNST

ACCOUNTANTS AND AUDITORS—SYSTEM SERVICE

| | | | | | | | |
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# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

### Trouble with Top Rolls Tearing

**Also bothered with cloth coming loose. What is best weighting for these rolls?**

EDITOR COTTON:

We are running 12s warp, filling wind, with a front roll speed of 166 r.p.m., drafting 7.8, with 17.15 turns. The gauge of the frame is 2¾-inch; the length of the top roll boss is 1¼-inch. We use 15/16-inch cotton, Strict Low to Middling. I would like to ask your readers the following questions.

Under these conditions, what is the most suitable amount of pressure, in pounds, to apply to the top leather rolls?

What is considered the best weight and kind of cloth to be used on the rolls making this yarn?

We are having trouble with the cloth coming loose, and the skins turning up. Any suggestions which may help in overcoming this difficulty will also be appreciated.

CONTRIBUTOR No. 5021.

### Causes of Top Rolls Fluting

**Tells of the benefits derived from the use of tallow and the proper oil on the stands.**

EDITOR COTTON:

I noticed in a recent issue that "CONTRIBUTOR NO. 4960" would like to see some discussion as to the causes of top rollers fluting on spinning frames. I think discussion along this line should prove very timely for most spinners have experienced this trouble from time to time.

I have found that the steel roller getting dry and sticky, causing vibration, to be one cause of the top rollers fluting. This will happen even if the stands are perfectly aligned and the gears set up correctly. As the stand has no groove or oil hole for oil to seep into, I find that the best way to prevent the stands becoming too dry is to use three parts of common tallow and one part of a semi-fluid lubricant on the stands. The mixture should be applied in such a way that the surface of the stands is fully covered. This mixture will give a smoother surface than oil or grease, and by using it undesirable blacking of the fluted rollers is eliminated. It is a good idea to use this mixture on new top rollers, as it prevents them from hanging when the frames are first started up.

Another cause of fluted rolls may be the oil hole in the roller saddle becoming gummed up, preventing the roller from getting the proper amount of oil. To prevent this, the saddles should be cleaned by soaking them in gasoline at least once a year. This softens the wicks, enabling the oil to be fed to the roll as it is needed.

CONTRIBUTOR No. 5047.

**WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.**

### Traveler Cleaners

**You will find this article on traveler cleaners for spinning frames well worthwhile.**

EDITOR COTTON:

I would like to pass along a few thoughts concerning traveler cleaners and travelers for a spinning frame.

As for the traveler cleaners on spinning frames, we find that careful attention to the setting of a good cleaner is more than well worth while in improving the running of one's work. There are various types of cleaners, some consisting of a pin inserted in the cast iron plate holders, others have a little projection punched up from the steel plate holder, but we have found the most satisfactory of all to be the individual Jenckes type cleaner, which can be adjusted to any circle of traveler that may be used in such a position to keep the lint knocked off the traveler so that it will not accumulate. If some means is not taken to prevent the lint accumulating on the traveler, especially on coarse numbers, it will gradually build up to the point that the traveler will become so heavily loaded, it will break the end down.

These cleaners can be obtained from any of the makers of spinning rings or machine shops, and in case one's rings are applied with a steel plate holder the projection that is stamped in can be hammered down and these cleaners attached with one of the screws that hold the plate in position on the ring rail. In case one is using cast iron ring holders the cleaner pin is pulled out and the ring rail drilled and tapped to take the cleaner. A gauge is used for this work that is plugged into the ring with a hole for the drill, going in the same position each time so that a rail can be completely drilled and tapped in a very few minutes. When the cleaners are put on they can be set up to the running position of the traveler with a plug gauge centering in the ring in such a manner as to extend over the flange just the right distance away from the edge of the ring to set the cleaner. With the cleaners in this position, set so that the traveler will just clear the edge, all of the lint will be knocked off before it has time to accumulate.

Now in regard to travelers. As for the 2-circle travelers, most spinners, I think, realize that a small circle traveler will float better and run better provided it can be applied to the ring without excessive breakage, the difficulty being in applying a small circle traveler to a 2-flange ring the traveler is apt to break before it will spring over. We use travelers that are moderately soft and apply 2-circle, 2-flange travelers without any material breakage up to and including No. 14 travelers. When using travelers heavier than No. 14 we use the same 2-circle but have them made for a 2½ flange which gives a little more space between the points. I might mention these are all square-point travelers. Small circle travelers will run much freer and float so much easier that there is not the drag or tendency to cut out, hence there is no special need for an extra hard temper. We find travelers as described to give twice the life and much better running conditions than larger circles with higher temper.

CONTRIBUTOR NO. 5017.

## Controlling Bad Work from Card Room

**"Wash's" ideas on this subject which has been so thoroughly discussed.**

EDITOR COTTON:

In the June, 1930, issue of COTTON, "CONTRIBUTOR No. 4759" states he has a problem in that he has trouble controlling the bad work which comes from the card room to the spinning room.

There is no method of preventing all bad work, but by taking the proper steps, slugs, black oil, etc., coming from the card room can be stopped. Slugs, black oil and fly, as a rule, gather at the fly frames.

I feel sure that "CONTRIBUTOR No. 4759" will find his trouble is caused from one of the following evils:

(1) Neglecting the picking of the clearers. (2) Top clearers in a poor condition, thus allowing parts of the clearer waste to escape. (3) Dirt under steel rolls. (4) Allowing blowing down. (5) Allowing the tender to wipe down when the frame is in motion. (6) Not wiping down the flyers at each doff. (7) Allowing the traverse guide eyes to become rough or worn, which collects a few fibers and allows them to escape in clusters. (8) In creeling when the skewer is inserted into the bobbin, the skewer will often push rings of dirty oily fly that had collected on the spindle out on to the taper of the bobbin, and this will eventually be drawn on the strand of roving to the roving guide and to the drawing rolls. (9) Carelessness in oiling shell rolls will cause oil spots. (10) Black oil spots are also created at the frame head where the oiler adds too much oil to the compound and gearing.

On page 935 of this same issue, the June, 1930, issue, "OLD-TIMER," in his article "Here's a Question for You," stated, "Ideas are the result of concentrated study and research. Research usually results in finding out something you did not know about; something you felt sure you knew all about." Perhaps this is just the fix our contributor is in. Maybe now, by applying a little concentrated study and research, he will be able to clear up his trouble.

WASH (R. I.)

## Figuring Proper Change Gear on Slashers

**Discussion also on relative speed of large and small cylinders for preventing stretch.**

EDITOR COTTON:

Regarding the questions, "What is the proper method of determining the correct size change gear for driving the cylinders of a positively driven slasher, and, should the surface speed of the large cylinder be greater or less than that of the small cylinder?"

I am sending herewith sketch of gearing for both cylinders as well as that for the size rolls. The following calculations referring to the sketch are self-explanatory, and I think will answer the first question. As to the surface speeds, I am of the opinion that for all ordinary work the surface speed of each cylinder should be the same, and that this surface speed should be the same as that of the size rolls.

In order to determine whether or not the surface speeds of the cylinders are equal:

Find the draft between the cylinders. If this equals to 1, the surface speeds are equal, since the amount delivered must equal the amount fed. The surface speeds of the cylinders must always be equal because there cannot be any draft at this point.

$$\text{Draft between small and large cylinder} = \frac{\text{Dia. Del. Roll} \times \text{L} \times \text{J} \times \text{H} \times \text{F} \times \text{D} \times \text{B}}{\text{Dia. Feed Roll} \times \text{K} \times \text{I} \times \text{G} \times \text{E} \times \text{C} \times \text{A}}$$

To determine whether or not the surface speeds of the cylinder and size rolls are equal:

Find draft between size roll and cylinder. If this equals to 1, the surface speeds are equal.

$$\text{Draft between size rolls and large cylinder} = \frac{\text{Dia. Del. Roll} \times \text{P} \times \text{N} \times \text{F} \times \text{D} \times \text{B}}{\text{Dia. Feed Roll} \times \text{O} \times \text{M} \times \text{E} \times \text{C} \times \text{A}}$$

To determine draft constant:

Work out chain of gears from size rolls, omitting the change gear.

$$\text{Constant} = \frac{\text{Dia. Del. Roll} \times \text{P} \times \text{N} \times \text{F} \times \text{D} \times \text{B}}{\text{Dia. Feed Roll} \times \text{O} \times \text{M} \times \text{E} \times \text{A}}$$

$$\text{Change gear} = \frac{}{\text{Constant}}$$

Draft desired plus or minus % contraction or stretching

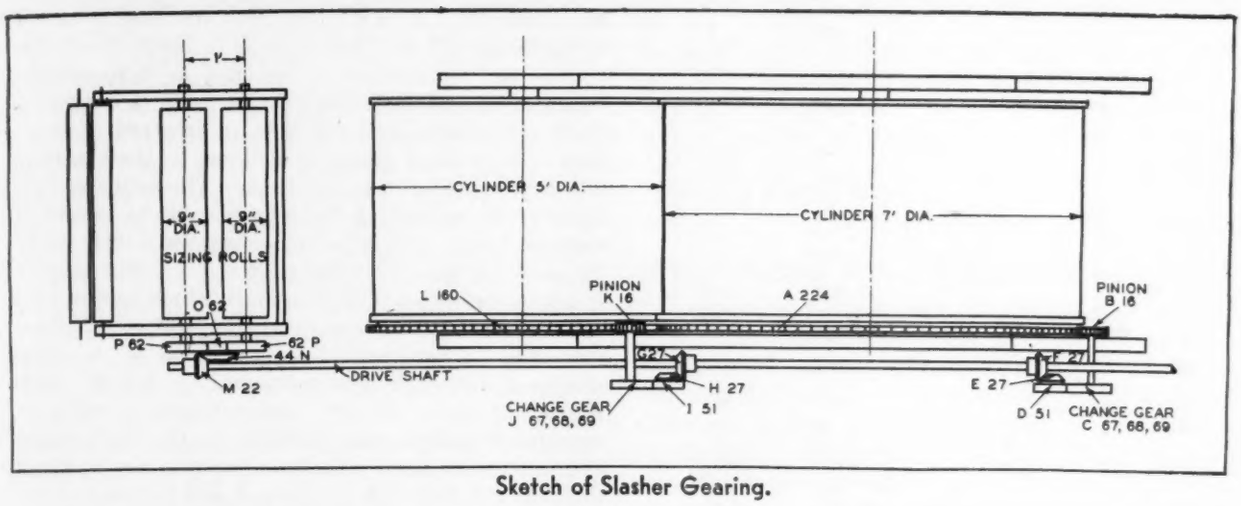
The draft is determined by the effect of sizing upon yarn. If the yarn contracts upon sizing, the surface speed of the cylinders will have to be less than that of the size rolls and consequently the draft will be less than 1, which gives a larger change gear.

CONTRIBUTOR NO. 5030.

EDITOR COTTON:

Replying to "CONTRIBUTOR No. 5022":

I do not know of any absolutely correct method of determining the proper size of change gear for driving the cylinder of a positively-driven slasher, since the delivery roll on the slasher is usually built up with cloth so that its surface speed is just about the surface speed of the cylinder. If this roll is too large, it




Sketch of Slasher Gearing.

will stretch the yarn. It would be simple mathematics to find the proper gear to give the roll and cylinder the same surface speeds, but a wrap or so of cloth should be put around the roll to keep the yarn from the cylinder under tension.

If the two cylinders were not positively driven, the surface speed of the small cylinder would be under the surface speed of the large cylinder, due to yarn contraction in drying. With fine yarns this contraction is not as noticeable as on coarse, and to put the gear on of the proper number of teeth, the contraction, twist, percentage of moisture in yarn in the space between the two cylinders must be taken into consideration. Simple mathematics will hit this gear within a tooth or so each way. Actual mill conditions, etc., determine the exact number of teeth in the gear.

CONTRIBUTOR No. 5031.

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EDITOR COTTON:

I note the inquiry of "CONTRIBUTOR No. 5022" with regard to figuring the proper change gear on positively driven slashers, and also inquiring as to whether the surface speed of the large cylinder and small cylinder should be the same.

At first thought, one would think that the surface speed of the large cylinder should be the same as that of the small cylinder, to prevent stretching the yarn. However, since yarn shrinks when wet, and naturally becomes longer when dried out again, it is possible that the length of the yarn delivered from the large cylinder to the small cylinder is greater than that delivered to the large cylinder from the size box. The yarn is wet with size when it passes around the large cylinder, and is partially dried out by the time it reaches the small cylinder. This elongation may be negligible, and I am merely offering this as a suggestion for a possible reason why the large cylinder should be run at a slower surface speed than the small cylinder. I understand that the surface speed of the two cylinders, when slashing rayon, does have to be different, on account of rayon having the quality of stretching considerably.

With reference to the proper method of determining the correct size of change gear for driving the cylinder of a positively driven slasher, unless the questioner has in mind the change gears necessary for figuring the speed of the two cylinders where they are different, I should think one would have no difficulty in applying a regular formula as used for figuring speeds through any train of gears. The items to consider being the surface speed of the cylinders, size roll and delivery roll, and the gears between these points.

In the event that the question was brought up because someone thinks that the two cylinders should be run at different speeds for the reason given, I can't see how there could be any set method for determining the proper change gears to be used for changing the surface speeds of the cylinders—that is, to get the proper speeds for different yarns. Of course it could be possible to determine the speed constant for each cylinder, and how much one tooth in the change gear would change the speed in each instance.

CONTRIBUTOR No. 5026.

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## A "Kink" in Covering Back Rolls

**This manufacturer gives his method of covering the back top roll on spinning and roving frames.**

EDITOR COTTON:

For the benefit of those interested in roller covering, I would like to tell of the method we are using, which we have found gives very satisfactory results My remarks, however, will be confined to the back top roll on spinning and roving frames.

There is a tendency for the back roll to hollow out sometimes very quickly where the traverse is not properly adjusted. This hollowing-out sometimes being so pronounced that at some points the roving will actually slip under and cause uneven work. This hollowing-out usually takes place within a few weeks after a roll is put in.

We have found that, by using a good all-wool flannel for the front rolls, in a majority of cases where the front rolls have to be taken out the flannel is found perfectly good. We therefore carefully cut the old cots off from these front roll take-outs and wherever the flannel is found to be in good condition the rolls are immersed in gasoline, flannel and all. They only remain in this a few minutes, after which they are taken out and allowed to partially dry. These goods are then put in the burning-down lathe and brushed with a piece of medium emery cloth (not sand paper).

This brushing is done just enough to smooth off the flannel and raise the nap. After these rolls have become thoroughly dry a good tight new cot is pulled on. These rolls are then put in at the back and under the conditions already given will run indefinitely without hollowing-out and will give all the cushion that is necessary.

CONTRIBUTOR NO. 5018.

## Producing Worsted Effect in Cotton Fabrics

EDITOR COTTON:

Recently there has been some demand for certain quality cotton fabrics, having a "limp" but "crisp" brushed effect, also those having a soft, slightly napped, feel where nappers are not a part of the mill's equipment. It is therefore the object of the writer to set forth a method which has been successfully employed to produce the desired effects without the purchase of expensive machinery.

### Construction.

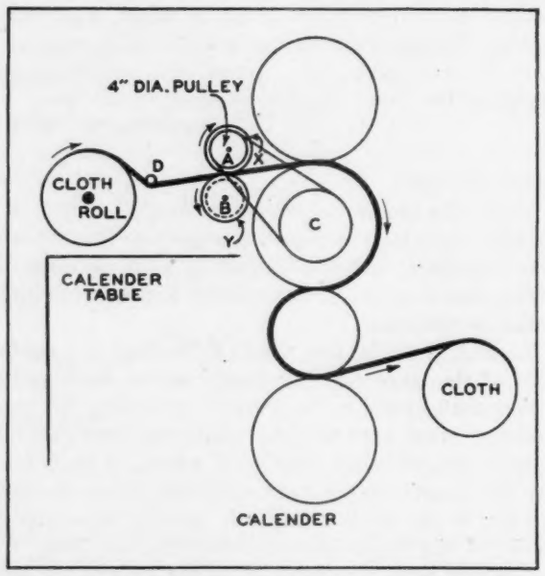
Some of these fabrics have been made entirely of good staple cotton, but the more popular effects have been produced by the combination of long and short fibers, usually a mixture of the type of cotton having a long silky fiber, and a quantity of a cotton or waste having a short, harsh fiber. This method has been employed in fabrics especially designed in weave and finish to approximate the worsted effects in dress fabrics, suitings, etc. In these particular fabrics the weaves have played an important part, weaves bordering on the basket or sateen effects lending themselves more readily to the "limp" finish desired. In many cases the various twills have been found effective, the most popular designs being the reversed twill effects bringing out "mottled" designs closely imitating overall jacquard weaves. The left hand twill is best adapted if straight twills are desired. The use of cut silk or rayon waste, and even dyed cotton waste, has been employed with excellent results in making this class of goods. The weights usually run around 2¾ to 4 yards per pound. Warp average about 22s/1, filling average about 19s/1. Width 36 inches to 40 inches, the most popular width being 36 inches.

### The Finish.

Two effective methods may be used depending upon the finish desired. Where a very soft, "limp" fabric is desired, the goods must first be de-sized. This is done by running the goods through any good de-sizing bath, and folding down wet on trucks, thus allowing it to stand a given length of time, depending upon the instructions furnished with the ingredients used in the bath. (In the use of this method care should be taken that only fast colors are used, as the de-sizing process may cause poor colors to run.) The goods are next run through a warm bath of water containing a very small quantity of softening oil, and through the tenter to bring goods back to the desired width. Now, to produce the slightly napped or brushed effects the following method is employed.

The goods are run through sand, brushing rolls attached to the back of the calender as indicated in the sketch shown herewith. *A* and *B* represent the two sand rolls. Both of these rolls are about 5 inches in diameter, and are located so as to barely touch the bottom and top surface of the cloth as it passes between them, entering the calender. *D* represents a small roll used to hold the cloth in constant relationship to the rolls *A* and *B* at all times so the brushing will not be too light, or too heavy. The pulley at *C* is fastened to the end of the calender roll by means of machine bolts. A 2-inch belt drives the 4-inch pulley fastened to the end of the sand roll *A*. The gear *X* is set-screwed to a 1¼-inch shaft which serves as a spindle through the center of the roll *A*. *X* then transmits its power to *Y*—another gear of the same size as *X*, set-screwed on a lineshaft in roll *B*. Both *A* and *B* travel at the same speeds, running in opposite directions with relation to the cloth which they act upon. Arrows indicate the direction in which the rolls and cloth move. Rolls *A* and *B* rest in bearings which are fastened to each side of the calender frame. These bearings can be made adjustable to produce various degrees of brushing. The two rolls are made of well-seasoned lumber, covered with glue and rolled in coarse screened, sand, or covered with fine card grinder emery. After leaving these rolls the cloth gets three light nips in the calender and is then yarded off.

The other method of finishing these goods is to run the cloth on a roll and place it on a stand at the back of the tenter frame. As it unrolls, prior to entering the tenter frame, it passes through a small




steam chest where the cloth is given a good steaming with live steam. Then it passes through tenter frame and proceeds through the sand rolls and calender as in the first process described. This method is used especially on cheaper fabrics as it is a much less expensive process. The cloth will also have a "crisp" feel after brushing which is sometimes more desirable than the softer finish.

By using this brushing attachment on the calender it eliminates the use of an extra process as well as producing a light nap on both sides of the cloth.

CONTRIBUTOR NO. 5033.

## Warps Sticking to Slasher Cylinders

**Several reasons for warps sticking to slasher cylinders are given here. What are yours?**

EDITOR COTTON:

If I were having trouble with warps sticking to the slasher cylinders, as "CONTRIBUTOR No. 4944" stated in a recent issue he is having, there are a number of things I would check up on. I would first find out if I were cooking my size properly; next, whether or not my cylinders were getting the right amount of steam. Being off on either of these will cause the warps to stick. I would also be sure that I was not running my slashers over 35 yards per minute.

"CONTRIBUTOR No. 4944" said he is using 22s warp yarn, using as a size mixture, pure rendered beef tallow, corn starch, and gum. I prefer some good grade of compound to the beef tallow, and I don't believe it will pay any mill man to use gum for numbers of yarn ranging from 15s to 30s. In fact, I think it is rather hard to beat a good starch and a good grade of compound, regardless of the numbers of yarn being used.

We are making 21s warp yarn and don't have any trouble with warps sticking. We run our cylinders with 8 to 10 pounds of steam pressure on them and a temperature of 230 degrees. We use 35 pounds of compound and 140 pounds of starch, and cook it by means of automatic control.

CONTRIBUTOR No. 5009.

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EDITOR COTTON:

I would like to give my experience with warps sticking to slasher cylinders. By so doing, it may be that I will be of some help to "CONTRIBUTOR No. 4944," who stated in the February issue that he is using as a size mixture for 22s warp yarn pure rendered beef tallow, corn starch, and gum, and that he is having trouble with his warps sticking to the cylinders.

Sometime back I experienced this same trouble, my warps sticking to such an extent that the cylinders finally became coated with gum, and almost as rough as sand paper. I tried various things but got no results. At this time we were using a very dirty cotton with lots of trash in it, which made the threads more inclined to stick. I was using corn starch with a softening preparation for size, with no gum. Finally I changed to a different softener and we got a cleaner grade of cotton. Our trouble also disappeared at once and the cylinders became much cleaner. We have had no more trouble of this nature since.

CONTRIBUTOR No. 5005.

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EDITOR COTTON:

I noticed just recently where "CONTRIBUTOR No. 4944 is having trouble with warps sticking to cylinders. He said he would like to know what causes this. I cannot tell him the cause, but I can give him a remedy. If he will put approximately six ounces of linseed oil, either boiled or raw, in each batch of size made up, he will find that this will cleanse and polish the cylinders nicely, and will eliminate all sticking of the yarn to the cylinders.

CONTRIBUTOR No. 5004.

## In Answer to "Which Puts in the Twist"?

**These contributors offer further discussion on the part played by the traveler and spindle in inserting twist.**

EDITOR COTTON:

I will attempt to explain the question "Which Puts in the Twist?" asked by "J. R. (GA.)" in a past issue of COTTON.

The method of putting twist into the yarn is one of the most interesting features of a ring spinning frame. The ring rail which carries the ring and the traveler (through which the yarn passes just before it is wound onto the bobbin) is given a vertical traversing motion. The bobbin and spindle revolve at a high speed and as they wind on the yarn the tension produced causes the traveler to be pulled around the ring. It is clear then that all the twist must be put into the yarn between the traveler and the front roll; therefore, we can see that the traveler has two important duties: First, it becomes the medium through which the twist is put into the yarn. Second, it guides the yarn onto the bobbin.

To study the question in detail it is necessary to clearly understand the following points:

First, the spindle must revolve or no twisting and winding can take place.

Second, if the traveler was fast on the ring, the bobbin could wind on the yarn, but no twist would be put into the yarn.

Third, if the traveler revolved at the same speed as the bobbin, twist would be put in, but the yarn would not wind on the bobbin. Therefore, the traveler and the spindle must both revolve and at different speeds. The traveler must drag a little behind the speed of the bobbin in order to wind the delivery from the front roll.

Suppose the empty bobbin is ¾-inch in diameter and the full bobbin is 1½-inch diameter. Then one revolution of the empty bobbin would wind 2.35 inches and one revolution of the full bobbin would wind on 4.71 inches. If the spindle makes 100 r.p.m. and the front roll delivers 10 inches of yarn, ordinarily this would mean 10 turns of twist per inch. To wind on the 10 inches of yarn on the empty bobbin (which is 2.35 inches circumference) it must make 4.25 revolutions and the full bobbin (which is 4.71 inches circumference) must make 2.12 revolutions. Then the speed of the traveler must be the speed of the spindle less the revolutions required to wind on the delivery or 100 — 4.25 = 95.75 r.p.m. for the empty bobbin and 100 — 2.12 = 97.88 r.p.m. for the full bobbin. Thus the twist per inch would equal 9,575 turns in the yarn on the empty bobbin and 9.788 turns in the yarn on the full bobbin. From this we can see that the yarn on the full bobbin has more twist than the yarn on the empty bobbin, but the difference is so slight no notice is taken of it.

The amount of twist in yarn will also vary as the position of the ring rail varies. When the rail is at the top of the traverse and starts to travel downward, the lower it goes the greater the length of yarn bebetween the front roll and the traveler. The delivery from the front roll is constant, therefore, this increase in length of yarn must be obtained by retarding the

winding of the yarn on the bobbin. Therefore, it can be said that the twist increases as the rail goes downward.

From the foregoing we can see that the traveler has two duties to perform, that of putting twist into the yarn and that of winding the yarn on the bobbin, but do not lose sight of the fact that the traveler must work in conjunction with the spindles. If the spindles do not revolve the travelers will be stationary, but if the traveler is taken off and the end pieced up, the spindle would put twist into the yarn, but the yarn would not be wound onto the bobbin. Therefore it can be said the twist is put into yarn by the spindle and the traveler working together, but the amount of twist put in is regulated by the speed of the traveler which in turn is governed by the diameter of the bobbin and the position of the rail.

CONTRIBUTOR No. 4978.

## Another Discussion of Twisting Fine Plied Yarns

A mill man gives complete lay-outs and details for small twister rooms.

EDITOR COTTON:

I was very much interested in the inquiries of "CONTRIBUTOR No. 4941," concerning methods and practices in twister rooms, and I read Mr. Soniaman's article in the June issue on this subject, in which he gave a lay-out, specifications, etc., for a 15,000-spindle twister room, on various numbers, two-ply.

My experience with twisters is limited to rooms much smaller than 15,000 spindles, but I would like to offer some information in connection with this suggestion, and rather than work out some hypothetical lay-out for a room of that size, it occurs to me that it would be better to give you the details of my own 3,000-spindle rooms and let the reader work out his amplifications.

We have one room of 16 twisters, 224 spindles each, total 3,584 spindles. This is running on 36s/2, 50s/2, and 60s/2 combed yarns. The rings are all 1¾-inch, gauge 2¾-inch, traverse 5¾-inch, front rolls 1½-inch. The spindles are band-driven. The lay-out is as follows:

4 twisters 896 spindles on 36s/2—21 turns.
2 twisters 448 spindles on 50s/2—15 turns.
5 twisters 1,120 spindles on 60s/2—22 turns.
5 twisters 1,120 spindles on 60s/2—28 turns.

Three twister tenders run, doff and clean these frames. One section man creels the spools, takes down empties, oils and bands the twisters and spoolers. This gives 1,193 spindles to each tender to run, doff, and clean.

In this room the yarn is wound single on 4x5 spools for 36s and 50s, and on 3½x5 spools for 60s. Twisters are creeled all over when the creels run down. The more modern method of doubling on tubes would eliminate much of the creeling and probably result in a better yarn. Travelers are changed every two weeks, which seems to be about their life. Rings are several years old and are worn some.

Rings and rails are cleaned once a month by removing the rails from the frame, scraping the accumulation of grease and lint from the under-side with a small stick, and washing with gasoline. Bands run about six weeks day and night, which requires about 55 bands to be tied on each shift. Bands used weigh 58 to the pound.

The details as to the equipment in this room, as to the machinery details, ounces of yarn on bobbin, spindle speed, turns per inch, front roll speed, size of travelers, production per spindle, length of doffs, etc., etc., are given in Detail Table No. I herewith, compiled in a manner similar to that used by Mr. Soniaman in his article in the June issue.

**DETAIL TABLE No. I.**

| Count | 36s | 50s | 60s | 60s |
|---|---|---|---|---|
| Ply | 2 | 2 | 2 | 2 |
| Spindles per twister | 224 | 224 | 224 | 224 |
| Number of twisters | 4 | 2 | 5 | 5 |
| Number of spindles | 896 | 448 | 1,120 | 1,120 |
| Size ring | 1¾" | 1¾" | 1¾" | 1¾" |
| Oz. yarn on bobbin | 2½ | 2¼ | 2½ | 2½ |
| Spindle speed R.P.M. | 7,500 | 7,500 | 7,500 | 7,500 |
| Turns per inch | 21 | 15 | 22 | 28 |
| Front roll speed, R.P.M | 74 | 100 | 71 | 56 |
| Size of travelers | No. 17 | No. 18 | No. 19 | No. 19 |
| Production efficiency | 88% | 88% | 92% | 92% |
| Production per spindle, 50 hours | .169 | .163 | .102 | .874 |
| Total production 50 hrs. | 1,515 | 7,32 | 1,143 | 980 |
| Creels run, hours | 16 | 19 | 32 | 43 |
| Doffs run, hours | 4 | 3½ | 7 | 8½ |
| Spools creeled per 50 hours per frame | 1,320 | 1,120 | 678 | 575 |
| Bobbins doffed per 50 hours | 10,480 | 5,680 | 8,575 | 6,310 |

Average bobbins doffed per hour by each twister tender: 207

**DETAIL TABLE No. II.**

| Count | 30s | 30s | 36s | 40s |
|---|---|---|---|---|
| Ply | 2 | 3 | 2 | 2 |
| Spindles per twister | 252 | 252 | 252 | 252 |
| Number of twisters | 4 | 2 | 4 | 2 |
| Total spindles | 1,008 | 504 | 1,008 | 504 |
| Size ring | 2" | 2⅜" | 2" | 2" |
| Oz. yarn on bobbin | 3½ | 5 | 3½ | 3½ |
| Spindle speed R.P.M. | 7,600 | 7,000 | 7,600 | 7,600 |
| Turns per inch | 18 | 16 | 21 | 26 |
| Front roll, R.P.M. | 86 | 90 | 78 | 65 |
| Size travelers | No. 17 | No. 16 | No. 17 | No. 18 |
| Production efficiency | 90% | 90% | 92% | 92% |
| Production per spindle, 50 hours | 2.40 | 3.775 | 1.852 | 1.398 |
| Total production 50 hrs. | 2,412 | 1,900 | 1,868 | 705 |
| Creels run, hours | 44 | 42 | 54 | 72 |
| Doffs run, hours | 4¼ | 4 | 5¼ | 7 |
| Spools creeled per 50 hours per frame | 280 | 293 | 283 | 175 |
| Total bobbins doffed per 50 hours | 11,850 | 6,300 | 9,196 | 3,500 |

Average bobbins doffed per hour by each twister tender: 154

The Cleaning and Oiling Schedules are the same for both rooms. They are as follows:

Twister tenders clean creels, center boards, heads and rails daily; and clean troughs and rollers and guides each doff.

Section man cleans overhead and blows motors weekly; oils cylinders twice a day; oils head ends and fast-moving parts daily; oils slow moving parts weekly; and spindles are oiled every two weeks.

Our second twister room is on a little heavier numbers, and so requires more help. There are 12 twisters, 252 spindles each, total 3,024 spindles, running 30s/2, 30s/3, 36s/2, and 40s/2 combed yarns. The rings are 2-inch and 2⅜-inch, 3½-inch gauge, 7-inch traverse, spindles tape driven using ¾-inch tapes, front rolls 1½-inch.

Four twister tenders cannot keep up the work of doffing, cleaning and creeling as all bobbins are doffed on pin boards to keep the yarn clean. We therefore use one creeler who puts up full spools, takes down empties, and helps with the doffing and

cleaning. Another man spends about one-third of his time oiling and sewing on tapes. The lay-out of this room is:

4 twisters 1,008 spindles on 30s/2—18 turns.
2 twisters 504 spindles on 30s/3—16 turns.
4 twisters 1,008 spindles on 36s/2—21 turns.
2 twisters 504 spindles on 40s/2—26 turns.

In this room the yarn is wound single on 4x5 spools. Twisters are creeled all over as the spools run out. Travelers are changed every two weeks. Two weeks, day and night running, seems to be about the life of the travelers for good running work. Ring rails are removed once a month for cleaning. The accumulation of grease and lint on the under-side is scraped off with a small stick and then the rail washed with gasoline. Tapes average about 8 months, making it necessary to put on about 7 tapes each shift.

The details for this room are shown in Detail Table No. II.

I hope these facts and figures will be of some benefit to your questioner and to others. If others would give the lay-out and details of their twister rooms in this manner for comparison, or suggest improvements in those already reported, I think it would be helpful.

CONTRIBUTOR NO. 4949.

## Takes Another Shot at "Wash"

**Who is correct—"Wash" or "Ky."? Let us have your opinion.**

EDITOR COTTON:

After reading the April, 1931, issue in which "WASH" again discusses card drafts and says I am all "wet," I cannot help but take another shot at him. I know that my writing ability does not in any way measure up to that of "WASH," but when he infers that I am not a practical man, well, that is a horse of another color, because it so happens that I draw all of my conclusions from actual tests and not on paper as it appears to me "WASH" does so often.

In the third paragraph of "WASH'S" article he states that I claim there is no such thing as a heavy feed on a card. If "WASH" had read my articles more carefully, I am sure he would not have made this statement, for I have never made such a claim.

"WASH" states that a heavy feed means a heavy sheet of lap and a light feed means a light sheet of lap to any practical man. I think this statement proves that "WASH," although he claims to be a practical man on all kinds of machinery, has never had any experience on combers, or very little at any rate. Any man that has had any experience with combers knows that it is possible to make a light or heavy lap for the combers and still have the same production going through by changing the feed, or in other words, having a light or heavy feed, but for "WASH'S" benefit, I will have to call it a slow feed and a fast feed.

"WASH" seems to find it very amusing to make fun of me for mentioning stretch between the lap roll and feed roll. He states that in all his experience he has never heard of stretch between these two points, which proves that "WASH" is not a thinker and has a few things to learn, because most anyone having ex-


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perience on cards knows that there is a small amount of draft between the lap roll and feed roll. This is true on any other machines that make laps, such as ribbon lap machines and combers. The laps would lag and make a mess of things in general if this were not the case.

I will now give my settings and weights, which I have used for years to make up to 100s yarn; also, for hard twist voiles, which is a cloth that shows up all the neps and slugs:

Doffer to cylinder, 5/1000; flats to cylinder, 10/1000; licker-in to cylinder, 7/1000; feed plate to licker-in, 12/1000; mote knives to licker-in, top, 12/1000; bottom, 10/1000; back plate, 29/1000; front plate, 29/1000. The weight of the lap is 12 ounces and the weight of the sliver is 38 grains. With a 27-inch doffer we maintain a speed of 6½ r.p.m.

Now regardless of what "WASH" has to say about this layout, we are making lawns and voiles that are second to none.

KY. (MASS.)

## Getting Cleaner Picker Laps

**Some suggestions as to how to do more cleaning at the pickers, if necessary.**

EDITOR COTTON:

In the October issue of the magazine "CONTRIBUTOR No. 4838" asks for a suggestion on how to obtain cleaner picker laps and with less lumps in them, and, in reply, will say that the lumps, or uneven places, I am sure must be the result of too high a fan speed for the class of stock he is using.

It is a fact that too high a fan speed may not present the cotton in a sufficiently loose condition against the screen, and this may be occurring all through the three processes. Our friend, however, does not state the foregoing, but it is evident that it occurs in the finisher lapper.

Again, a very high fan speed will skip, and whip the stock against the screens and may not permit enough dirt and trash to escape through the beater bars; on the other hand, too slow a fan speed will result in the expulsion of too much fiber at the beater bars, or even the over-beating of the cotton.

However, in regard to the lumps, I think the fan speeds are at fault, and our friend would also do well to examine the setting of the dampers alike on both sides of the machine; also, the flues could be overhauled.

Evidently "CONTRIBUTOR No. 4838" is handicapped by old-type machinery, and, as the stock of all classes received nowadays is much dirtier than that of some years ago, we undoubtedly have to adopt extra cleaning methods.

In this case I imagine the grid bars may be of the old type, namely, that of four adjustable and five fixed, which I think does not give much opportunity for all the trash to drop.

A great improvement could be made, if the machines are of the Kitson type, by installing the new adjustable grid bars, which are arranged in sets of eight bars each, which can be set easily, giving a

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greater scope when dealing with a wide range of grades of stock.

Now, apart from the foregoing, "CONTRIBUTOR NO. 4838" states that he has no opening equipment, but that the bales are mixed by hand and aged in bins for a week.

Ageing the stock for a week or more is all right. Some mills do not, or cannot, do that, but just open up the bales and mix the cotton on the horizontal aprons to the breakers, and away it goes. Of course this is, to my knowledge, only practiced in mills running short stock, or where they are not quite so "fussy".

However, to get to the point which really affects our friend, we know that the process of opening long staple cotton is far different from that of the process applied to short stock. Why? Because short staple cotton does not mat in the bale as firmly as long stock, and the short stock is usually more wiry or fluffy.

Furthermore, short staple cotton is less likely to be damaged by rough usage. On the other hand, rough treatment of long staple will break up much of the staple and also cause excessive waste or fly in addition to decreasing the strength of the yarn to be made, as well as the appearance of the latter in regard to the quantity of neps contained in it.

However, having the knowledge that this man has no mechanical means of opening the cotton before it is placed in the bins—a bale breaker combined with fans, apron, a condenser and pipe would work wonders by loosening the stock more—I would suggest that if he does not do so already, that he open the bales as far in advance as possible before putting the stock in the bins.

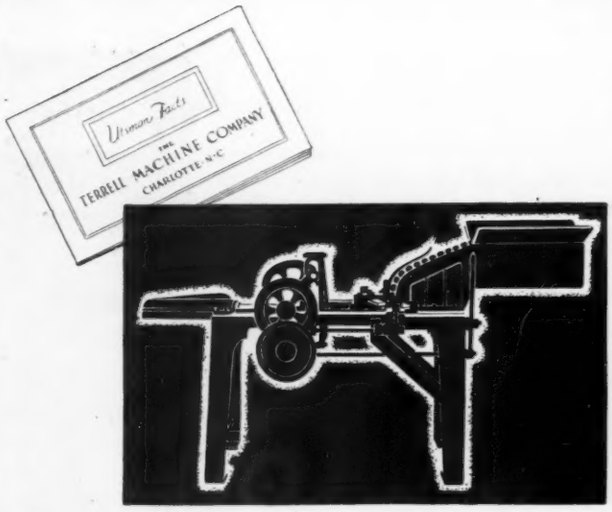
I have seen an air hose applied to each bale after they have stood opened for a time to bloom the stock before placing same in the bins, but of course the breaker is the best and cheapest method, as by ageing cotton we hope to obtain a loose, fluffy nature of same before picking.

There are two things necessary to secure uniform breaker laps. The first is, well opened cotton, and the second is, a uniform volume of cotton being fed.

Poorly opened cotton—here is where we come to the probable cause of the lumps, which our friend finds in his laps. Well, poorly opened cotton will be conveyed onto the upright apron or lattice in the breaker picker, and some of these lumps will be knocked off by the doffer or stripper roll and will go through the pipe to the beater. Of course a lump, or lumps, passing through in this manner will be received by the beater, Buckley or porcupine, in this case, and opened, but into a considerable volume, and later this volume is blown or condensed onto the screen in a small area, less than the size of the lumps; hence, the result being the thick and thin places in the lap.

The finisher pickers cannot remedy this defect altogether, as they have plenty more defects to straighten out to obtain a perfect lap for the cards.

Another reason for the cause of lumps may be the type of porcupine beater in use, and if our friend is using an old type which the writer has in mind, namely, the type which has too much air space between the circumference of the discs and the spacer pulleys, he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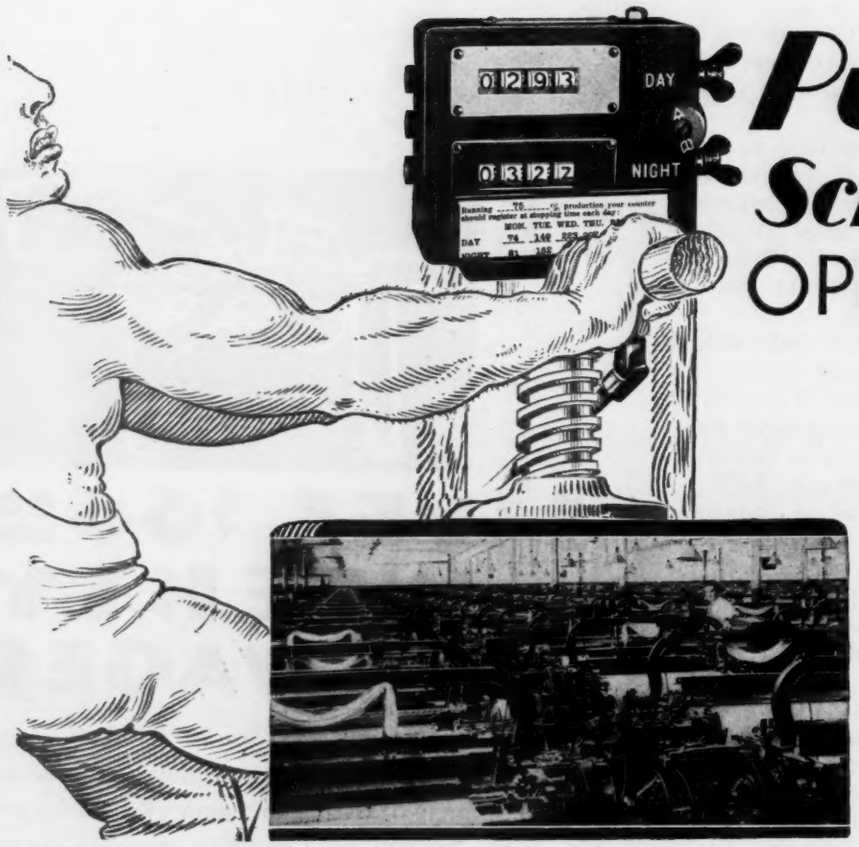


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will probably find that the screws which hold the picks or blades on the discs will catch plenty of stock, and at various intervals lumps will fly off into the sheet of stock and also into the lap eventually. This type also will cause stringy laps.

Now I am wondering if "CONTRIBUTOR No. 4838" is correct in his beater speeds and settings of rolls to beaters. All this, and setting of grid bars will of course, if not right, affect the cleaning of the stock. He gives the fan speeds, which may or may not be correct. I have illustrated in a previous paragraph how he can ascertain the best speed for his fans. However, the fan speeds may be all right, but if the fan draft is deficient or "spotty" he will get thick and thin places in the laps.

As regards beater speeds, we never know truly which are right, still it is safe to say that 900 to 1000 r.p.m. is safe for a two-blade beater. For the Buckley type the speeds vary with the diameters, and these are set so as to give the same surface speed in each size. An 18-inch type, 1050 r.p.m.; 30-inch, 650 r.p.m.; and 41-inch, 450 r.p.m.

Regarding the setting of the Kirschner beater, I feel safe to advise a setting of ¼-inch, not any closer, as close settings of this type of beater have been proven unsatisfactory to staple cotton.

D. E. (R. I.)

## Southern Textile Association Meeting

(Continued from page 839.)

to their jobs. You older fellows may have been among these, but how about it now? If you are an overseer, or superintendent, or have any other connection with textile manufacturing, and do not get a delight out of your job other than the monetary benefit you receive, you are not fit to hold your job, and the time is coming when you will seek real pleasure in learning to do a perfect job, or go down in defeat. Sounding a warning which I believe we all should heed, Mr. George S. Harris, at our semi-annual meeting last fall, said, 'Speaking to you collectively as an important department of management, I say that you have today a most unusual responsibility. I say to you individually that unless you are applying yourself 100 per cent to your problems, you may expect, sooner or later, to be junked with the antiquated equipment some mills are attempting to operate.'

"We have got to pull down the 'No Admittance' signs from our minds, and cast all prejudices from our hearts, accept all progressive ideas from whatever source, and test them, and if they prove good, stick to them; if they prove to no advantage, discard and forget them, but not until we have proved them to be worthless. Be sure of facts. To choose blindly is probably to choose wrongly. Decision without facts is delusion. Do not trust to hunches."

Mr. Vick discussed next the current problems in merchandising, briefly, and returned to his subject with the suggestion of more advertising for textile products. He said that in looking through three nationally circulated magazines recently, he found almost every commodity going into the home advertised, save textiles. "If the pots and pans your cook uses are worth advertising," he asked, "is it not a fact that


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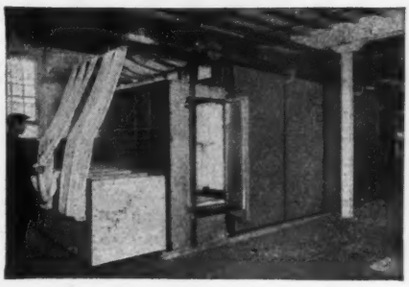

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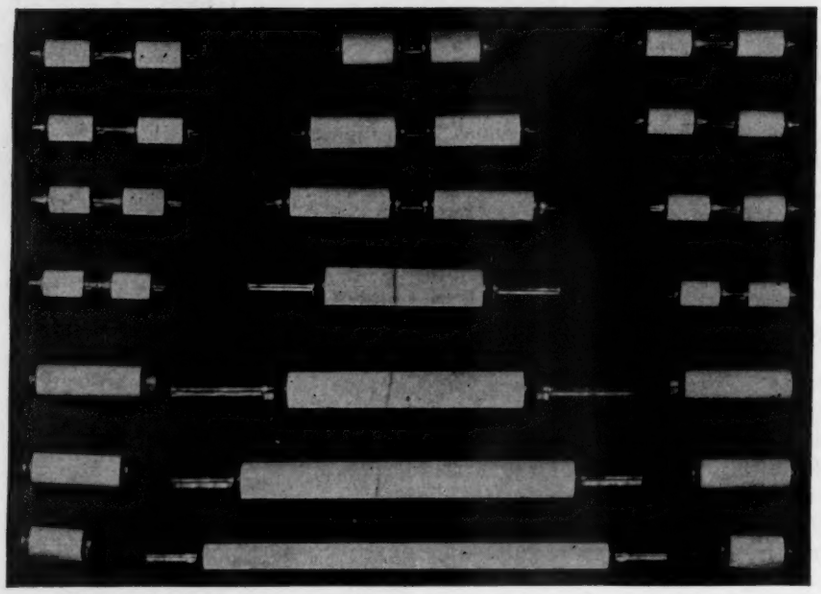

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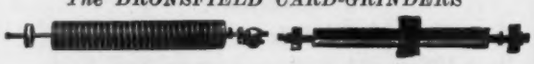

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the goods she makes her dresses out of are also worth as much? I saw a few days ago an article which said that the So-and-So company had reduced their number of traveling salesmen and were resorting to more advertising with good results. How in the world can we expect people to buy our goods unless they are told where to buy them and what quality they will get? Pull down your 'No Admittance' signs from your out-of-date ideas, and let the world know what you have to sell and where they can get it."

Mr. Vick pointed out that many wealthy and important travelers pass through the South yearly, and that mills should encourage these people to inspect their plants. Also, he said, "one little way to get consumers of your goods to visit you would be to have some cards printed—'The merchant and his customers who use this goods are invited to visit our mill whenever they pass this way. It will be a pleasure for us to make your rest period, while traveling, a pleasant one.'—place one in every bolt of finished goods you send out. People who buy goods—jobbers, wholesalers, retailers and consumers—are all traveling at times. When they pass your mill, why not show them what you make and the care you use in making it?"

The business session, with election of officers, followed Mr. Vick's talk, and following this, the meeting was adjourned. On Saturday afternoon, a number of the delegates participated in a boat ride on Charleston Harbor. Due to a downpour of rain, a proposed visit to Fort Sumter was prevented.

## Modern Times Demand Modern Men

(Continued from page 841.)

back". Well, there might have been a day when that fellow could get by with that kind of work. He is all the more like a machine for this trait, and I imagine that he wonders why he does not advance more rapidly.

"Fertilization" is a term we can apply to the other phase of generating ideas. The mind cannot work in a vacuum; it is to no avail to prime for ideas and not feed in anything.

There must be information which our mental processes can tap. Anything we read except fiction will help fertilize ideas and even fiction will help from time to time. The more we read in our direct field, and about our own jobs, the more certain we can be of keeping ahead or even up, with the machines which have been so remarkably improved.

When possible we should attend all association and discussion meetings that we can, which is a privilege we have of broadening ourselves and will be found to be very helpful to each of us in our particular industry.

These meetings help us in many ways. We learn each other better and are able to get ideas from other men who are thinking and working out problems on their jobs by attending these meetings.

Another thought, and it may seem inappropriate in a talk like this, but isn't it a good place to ask ourselves if we as men live the right kind of lives before our people? Do we set the proper kind of examples?

Human nature is a looking glass in which we see

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others and the way they look to us is a true picture of the way we look to them. Then we should not overlook the greatest of these thoughts, character building. It is fundamental.

Money will buy great homes and palaces, but if gained without principle they are only abodes. The man with a soul has a better home in a four-room house—he feels the home instinct that the man without a knowledge of such a life can never feel or understand.

### Character is Basis of Real Wealth.

The real wealth, the real foundation of lasting peace and power, is character. Friends gained by character are friends who appreciate character, then the man of honor needs no money to protect his place.

We know our own weaknesses and isn't it true that we make more efforts to keep others from knowing our failings than we actually do to rid ourselves of them? We think there is some satisfaction in blinding others to our faults. But wouldn't it be more gratifying to really master those deficiencies instead? Lack of will-power is one reason why we fail to be what we want to be. Insufficient effort is another reason.

So let's put the clamps on ourselves and forge ahead. It is worth the effort because of the satisfaction we will gain from being what we know we should be.

We, as overseers and superintendents, are looked upon as examples and that is the greatest personal responsibility we have.

A wise man once said: "We do not become educated by *gambling in knowledge.*" A pithy and pointed sentence and it should be printed in gold on a silver background and nailed to the footboard of his bed by every human being who reads purposelessly, thinks purposelessly, lives purposelessly. Today as never before, the plums of life will be picked by men who know exactly what they want and have charted the straightest and shortest way to get it. Watch them and you will see that they will not allow the Highway Department of Life to post "detour" signs on their roads.

The trouble with lots of us is, we spend too much time "packing trunks" that we cannot take with us, and if we did they would contain few useful things. So let us put every ounce of energy and effort we have into mastering ourselves so that in these days that are upon us now we will be found in the front lines as masters of the great industry which we represent.

Another question—particularly to superintendents—let's take the measuring stick which we apply to prospects when we are hiring our overseers, apply it honestly and impartially to ourselves and see if we measure up to our own requirements.

Let me say in conclusion that we as men must be recognized as the most vital factor in industry's life today. We must not think we never had a fair chance and believe that others must have had opportunities that never came to us.

If goals are to be reached and the high marks are to be made it will take determination and with it will come the successes which we hope each may achieve.

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# TEXTILE BOOKLETS *Worth Writing For!*

*The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.*

**1. Cotton Picking, Carding and Spinning**—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

**2. Pepperell Equipment**—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

**3. Modern Practice in Textile Wet Finishing** (Slack Loop System)—Practical discussions, various methods bleaching, covering batch, semi-continuous, fully continuous for cotton, rayons and mixtures. Request must be on mill letterhead. By Rodney Hunt Machine Co., Orange, Mass.

**4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor**—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

**5. The Bahnson Master Control**—Bulletin No. 801, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By the Bahnson Company, Winston-Salem, N. C.

**6. "Textile Brushes"**—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

**9. "Custom-Built" Motors**—Complete set of bulletins covering various types of electric motors for textile master mechanics and executives. By Louis Allis Company, Milwaukee, Wis.

**10. Leathers, Textile**—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

**11. Whitinsville Rings**—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

**12-A—Instruction Manual for Type K Bobbin Cleaner. Also Instruction Manual for Utsman Bobbin Cleaner**—two separate booklets describing adjustments of machines outlined, and also describing effect of bobbin shapes upon the cleaning process. These booklets intended for users of machines outlined. Applicants should designate which booklet is desired. By the Terrell Machine Company, Charlotte, N. C.

**12-B—Instruction Manual for the Termaco Roving Bobbin Cleaner**—booklet in four sections on adjustment of machine; on how to use machine to best advantage in reducing waste and saving labor; parts catalog; description of new attachments which can be applied to earlier models of the machine. By the Terrell Machine Company, Charlotte, N. C.

**13-A—Equipping Modern Textile Plants**—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. Also Dyed in the Truth—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

**15. The Powers System of Thermostatic Control**—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

**17. Arcy**—12 page booklet on getting most value from starch in warp sizing and cloth finishing. By Drake Corporation, Norfolk, Va.

**18. Popular Industrial Chemistry**—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, 1404 No. Front St., Philadelphia, Pa.

**19. Quaker City Chemical Co.**—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad Street, Philadelphia, Pa.

**20. Bleaching, Dyeing, Finishing and Printing Textile Goods**—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

**21. Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

**22. Tragasol and Its Uses**—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

**23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

**24. Wyandotte in the Textile Mill**—90-page booklet with information on bleaching, dyeing all textiles, including hosiery.—J. B. Ford Co., Wyandotte, Mich.

**25. "Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

**27. The Seven Factors of Belting Economy**—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 88 Ferry Street, New York City.

**28. Akron Belting**—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

**29. Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

**30. Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

**31—Canvas Baskets and Trucks.** Doff boxes, trucks and for all textile uses. By Rockweave Mills, LaGrange, Ga.

**38. Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness, and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

**39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments**; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y.

**41. Budget Control**—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits.—by Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

**42. Textiles and the Telephone Typewriter**—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel. and Tel. Co., Long Lines Department, Atlanta, Ga.

**43. Pornitz Vacuum Bleaching Apparatus**—showing the many advantages of this system for bleaching, including the saving of time, saving in chemicals, saving in the transport of material from one apparatus to another, etc. H. H. Leonard, 475 Fifth Ave., New York, N. Y

**44. Points of Interest in and Around Atlanta**—86 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

**45. Fidelity Universal Ribbers**—a forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia, Pa.

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**47 The New Hartmann Spinning Process for Cotton Yarns**—showing how with the Hartmann Ring Spinning Frame with combined drafting, it is possible to produce finished yarns in one operation direct from the untwisted sliver of the drawing frame. H. H. Leonard, 475 Fifth Ave., New York, N. Y.

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**52. The Lincoln Twin Disc Floor Machine**—showing the many advantages of clean, sanitary floors, the saving in time and labor through using floor cleaning machines and describing in detail the various models of Lincoln floor machines. Lincoln-Schlueter Floor Machinery Co., 213 W. Grand Ave., Chicago, Ill.

**53. Anchor Fencing Service**—a 24-page booklet showing various classes and types of chain link and iron fences and gates for industrial purposes. Anchor Post Fence Co., Eastern Ave. and Kane St., Baltimore, Md.

**54. Shipper's Handy Helper**—A forty-eight page booklet giving valuable information on shipping problems, including suggestions on packing, marking, numbering and invoicing shipments, and describing the principal items generally used in shipping departments. Southern Shippers Supply Co., 113 Courtland St., S.E. Atlanta, Ga.

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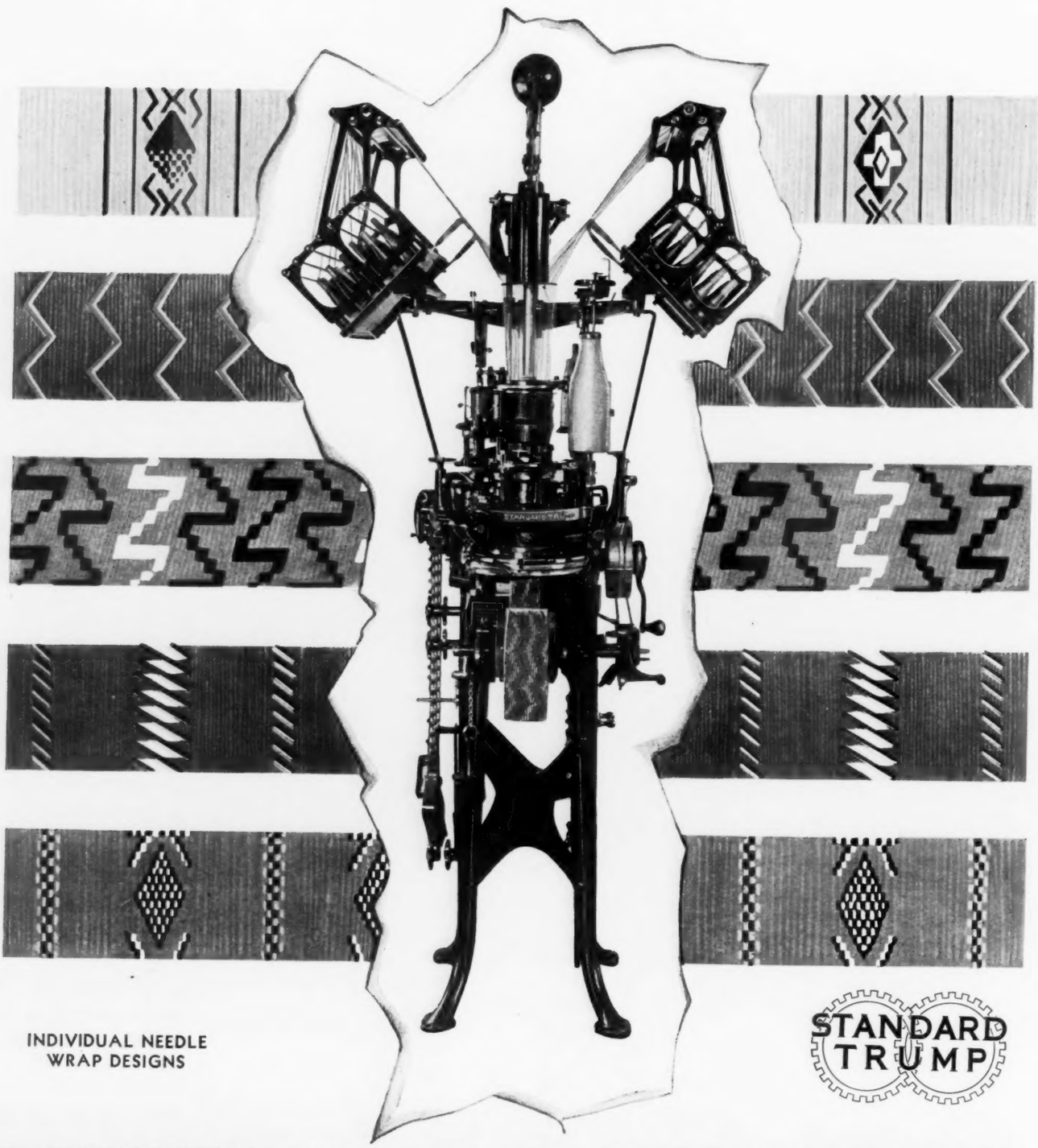

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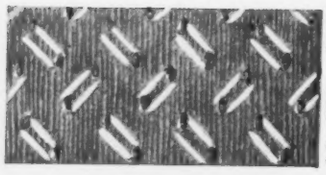

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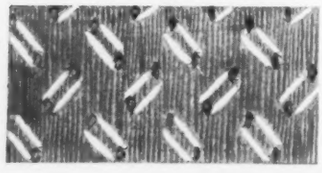


# "The Full-Fashioned Hosiery Worker"

## Reviewing a recent document concerning wage trends, production, etc., in the full-fashioned hosiery industry, prepared by Dr. Geo. W. Taylor

**THIS is an interesting review of an important book. The author of the volume reviewed, Dr. George W. Taylor, is becoming more generally known to the full-fashioned industry through his work in connection with compiling and interpreting statistics and information pertaining to that industry.**

**Because of his recognized standing in this connection, and of the timeliness and thoroughness of this, his latest book, space is given to the accompanying review of the volume. . . . . .**

IN HIS latest book, "The Full-Fashioned Hosiery Worker," George W. Taylor of the Industrial Research Department of the University of Pennsylvania, presents the first authentic history of the rise and trials of the full-fashioned hosiery workers' organization. In many respects the publication is historic of outstanding incidents in the rise also of the full-fashioned industry. His work was commenced and completed during the period of the turn of the tide in production of hosiery, and covers one of the most troublous cycles in the progress of the industry; the last pages to be written of what seems certain to be a memorable survey were given to the printer at a time when depression was believed to be at its greatest depth, and matters pertaining to readjustment were being studied in a most serious way.

Dr. Taylor dates his study of conditions in the full-fashioned industry from 1928-29, when the first shadows of a price decline were falling athwart the trade paths. He chronicles the peak production of full-fashioned hosiery, supporting his figures by data obtained in 1930 for his 1931 census of stocks in manufacturers' possession on January 1st of this year. More than 25,000,000 dozen pairs of women's full-fashioned stockings were produced in 1930 and sold at the lowest prices in many years, this production being attained when the industry was in operation far below potential capacity.

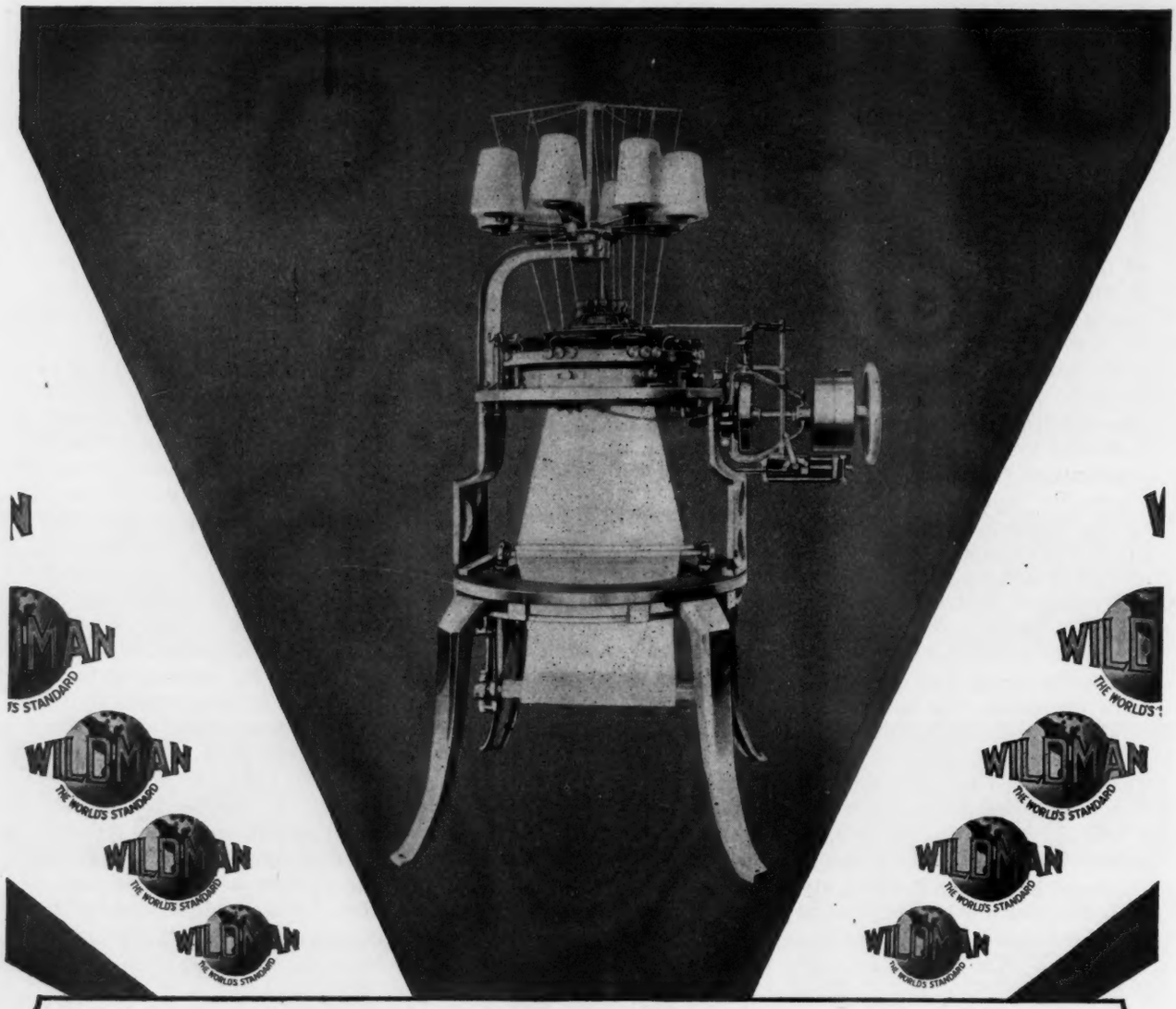
Dealing largely with events in the industry during 1929, Dr. Taylor's book covers the period when, for the first time, contractural relations between an organization of manufacturers and the American Federation of Full-Fashioned Hosiery Workers were being maintained under a contract which at the time it was adopted by representatives of the two parties signatory was regarded unique in industrial bargaining. His work was on the press when, a few weeks ago, the organized manufacturers served notice upon the workers' organization that the contract would terminate on August 31st, 1931. As this action had been foreshadowed in informal discussion looking to negotiations for a downward revision in wage rates, held by the manufacturers to be necessary as a sequence of an oversupply of hosiery at a time when the markets were trying to grope their way out of depression, Dr. Taylor may be said to have had before him a picture of the greatest height to which the tide of hosiery production in American mills ever had risen; the beginning of the ebbing which marked probably the lightest production in proportion to equipment in place recorded to this time. That Dr. Taylor in his work of more than 200 pages made good use of the picture presented through indefatigable research is evidenced in the text and in charts and tables by which a study of the mass of data is simplified, leaving much for the thoughtful consideration of those seeking a solution of the perhaps most difficult problem with which full-fashioned hosiery interests ever were confronted.

Summarizing facts and conclusions developed by his use of statistics supplied by manufacturers employing only union operatives, Dr. Taylor holds that the wage problem cannot be singled out for separate treatment in any diagnosis of the ailments of the hosiery industry, and makes it apparent that there are certain operations of the law of supply and demand that set at defiance the efforts of man and organizations of men to find a short cut out of the present dilemma of their creation. The author warns that if the full-fashioned industry in coming years maintains anywhere near the current stage of production, distress hosiery will accumulate and the markets go through another period of chaos, and he suggests "rapid collection and dissemination of information" as the only step that can be taken at this time as a means of meeting the problems of an over-expanded industry.

Wage rates for mill workers will become more nearly uniform than at present, is one thought brought out in Dr. Taylor's comparisons of schedules and full time earnings, but it is pointed out that the present need for rate equalization presents a number of serious problems. Absence of uniformity may be ascribed in part to the activities of the union for procuring increased rates during periods of unusual increasing demands for hosiery, and when deflation sets in, an urge by manufacturers for decreases in rates. He comments, in his study of rates, "There are compelling forces that prevent the arbitrary establishment of any preconceived level of rates in any industry."

Dr. Taylor explains that, for arriving at the earnings of full-time workers for reaching an intelligent conclusion, he confined his study to the use of payrolls of union plants, where there existed a uniform piece-rate scale applying to practically all union plants. The point is made, however, that a uniform wage rate scale may not result in uniformity of earnings, dissimilarity in earnings being shown in uniform rates developed by the American Federation of Full-Fashioned Hosiery Workers.

In 1929, says Dr. Taylor in his introduction, 347 establishments were engaged in the manufacture of



Use Wildman Body Machines for the manufacture of *quality* Rayon.

WILDMAN MANUFACTURING CO.
Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

# WILDMAN
## SPRING NEEDLE BODY MACHINE

women's full-fashioned hosiery in the United States, and 43 concerns, operating 53 plants, representing approximately 28 per cent of the equipment in the industry, were signatories to a national labor agreement with the hosiery workers' federation. The study of rates and earnings, Dr. Taylor explains, centered about 27 of these plants, and covers the growth of the two-machine system and subsequent efforts to restore the single-machine plan.

It is brought out in the survey that in 1913 the full-fashioned industry witnessed the birth of its first national union of workers, that since 1914 the industry quadrupled its yearly output and again quadrupled it, and in 1929, the year before the steady decline in shipments and increases in manufacturers' stocks, expanded its productive capacity 25 per cent of the 1928 capacity, the greatest expansion taking place in the 15 years after the workers effected their first organization for dealing with manufacturers. In a five-year period, from 1925 to 1930, the industry advanced from a position in which it could not supply the demand for hosiery to one where it was 30 per cent over-developed, according to statisticians' estimates.

It appears from the survey that 35 per cent of the total equipment of the industry is in the Philadelphia producing area, and 12 per cent in the South, principally in the Carolinas and Tennessee. Reading, the second largest producing section, operates under a wage rate that is said to represent one of three levels which have appeared, practically since the first reductions anywhere after the decline in prices started to become severe. The severity of plant idleness is pictured as due to 56 per cent of manufacturer's total plant investment being embodied in fixed assets that are usable only for knitting hosiery.

Dealing with the relationship of production to unfilled orders and stocks on hand, Dr. Taylor points out that "the real indicator of future difficulties, which were finally faced in 1930, was the status of unfilled orders." The actual beginning of their decline as experienced last year began in the fall of 1929. The author deduces from the facts which he presents on this aspect of conditions, that "it appears unfilled orders furnish the most sensitive data for actually forecasting a possible deflation," and, he suggests, "declines in orders precede stock increases and production decreases."

Epochal years in the full-fashioned hosiery industry were 1929 and 1930—1929 for a tremendous increase in potential production, on the very eve of the first indication of a decline in demand. In that year, it is related, 2,624 new knitting machines were installed, and in October the aggregate output attained a new high record for all time, while for the year it approximated 27,000,000 dozen pairs, another high mark. And it was in 1929 that the first reduction in wage rates in union mills since 1924 occurred. In 1929 also the operation of two leggers by one knitter and a helper came to be adopted generally as one means toward the lowering of operating cost. In the meantime, it is recalled upon a perusal of Dr. Taylor's historic data, there had been a stiff trend to double-shift operation of plants.

From the expansion and speeding up that helped make 1929 an epochal year in the full-fashioned hosiery industry, manufacturers and their employees early in 1930 realized they had entered upon an entirely new economic era that represented the antithesis of conditions in 1929. Doubling up of jobs resulted in vastly increased idleness among knitters, thus detracting from purchasing power at the dawn of a period when this shrinkage meant danger ahead in the way of reduced demand and, in sequence, curtailment of employment of knitting mill operatives—a change that necessarily is not commented upon in Dr. Taylor's book, but is recalled in perhaps more forceful manner than it was pictured at the time of its evolution. The direct result of the 1929 expansion was felt in most severe form in 1930. It seems therefore not inappropriate that the work suggests some method be devised for "rapid collection and dissemination of information"—information such as was unfolded in the course of happenings which might have been in large measure averted had it come to hand through co-operation of manufacturers.

"Locking the door after the horse is stolen," some will suggest, may prevent the theft of another horse. It is of interest to the various interests represented in substantial manner in the full-fashioned hosiery industry that Dr. Taylor so vividly portrays the result of going ahead blindly with expansion.

### Observations by the Author.

Referring to the depression of 1914 and the discussion, at the time, of the Philadelphia plan, under which a legger might operate two machines with or without a helper, it is recalled in Dr. Taylor's historic data that out of town shops were not permitted by the then workers' organization to double up the jobs, because, mainly, their work was confined largely to ingrain hosiery. Thus in the 1914 depression other districts were unable to compete with Philadelphia rates, while in recent years and at the present, the reverse is held to be a fact.

Another critical period in the life of the full-fashioned hosiery industry as referred to in Dr. Taylor's book was in 1920, with hosiery prices disturbed by the "fall of silk from $26 to six dollars a pound."

During the period of rapid expansion of the industry, 1922-1927, the unions set the rate. With the beginning of the decline and holdings of burdensome stocks by mills, manufacturers started to assume that function. Inexorable economic forces are making essential an equalization, is the author's comment.

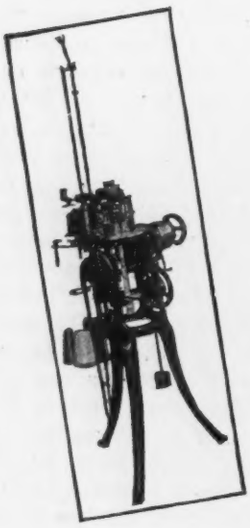
"Data pertaining to actual yearly earnings afford a measure of the accuracy of the prevailing concept that full-fashioned hosiery workers formed, in 1929, one of the highest paid wage groups in all industry," is another observation of the author.

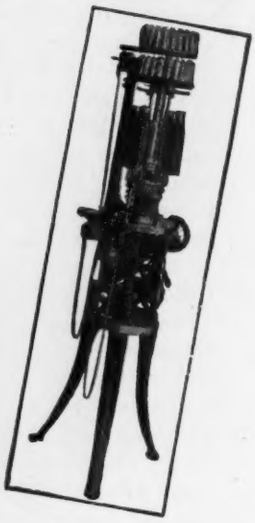
### Industrial Stories in Charts.

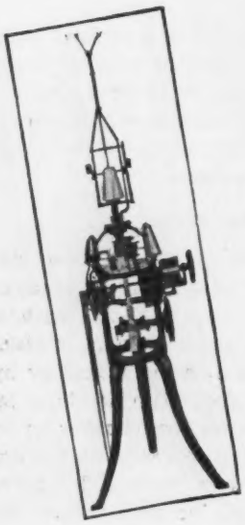
"The Full-Fashioned Hosiery Worker," copyrighted by the University of Pennsylvania, is replete with charts and tables bearing on the statistical aspect of the full-fashioned industry and throwing interesting sidelights on earnings of mill workers in the six operations of legging, footing, topping, looping, seaming and boarding.

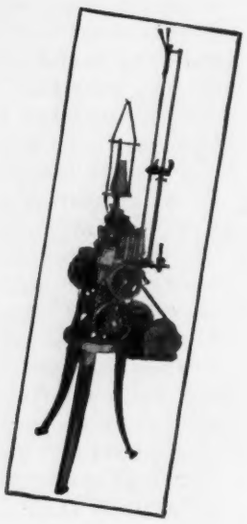
# ALL TRUE-RIB

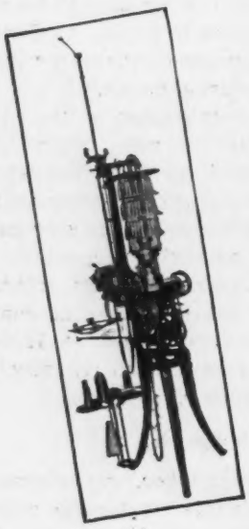
(Patented or patent pending)

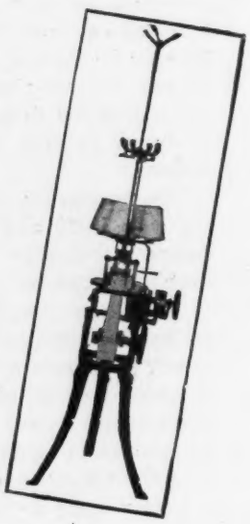


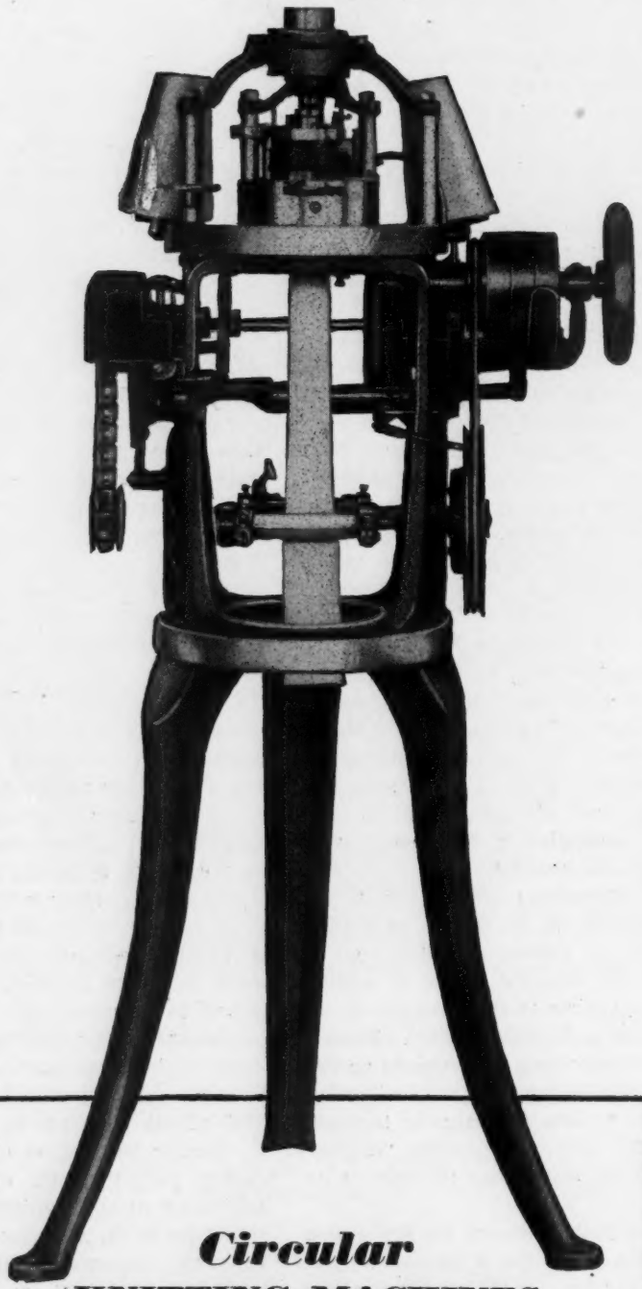












*Circular*

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**BRAIDING MACHINES**
**CREASING MACHINES**

**FIDELITY MACHINE CO.**
**3908-18 Frankford Avenue**
**PHILADELPHIA, PA.**

THE FIDELITY UNIVERSAL RIBBER

Of special interest at this time is a table showing hosiery production, stock on hand and unfilled orders by months from 1927 to 1930 inclusive, the showing being based upon monthly reports of the United States Department of Commerce, affording a study of the relationship of unfilled orders to production in an approach to times of stress for the industry. Another table presents by months the relationship of unfilled orders to stocks in mills and shipments.

Actual earnings of workers in the six operations, classified by age and occupation, make up an interesting table which, however, may offer nothing of moment in the way of the constructive for the manufacturer.

A wide disparity is shown in the earnings of female and male operatives in the boarding room, the variance being in favor of the males. In a given bracket of actual overtime earnings there are found 14.8 per cent of a total of 54 males comparing with 22.4 per cent of a total of 13 females. In a higher bracket there are 25.9 per cent of the total males, against only 1.7 per cent of the total females.

Using a given bracket of full time earnings, it represents 52.7 per cent of the operatives on 20 section 42-gauge leggers, comparing with 10.4 per cent of those operating 20-section 39-gauge machines. In the next lower bracket by $500 a year we find but 24 per cent running 20-section 42-gauge machines, and 29.9 per cent of the total knitting 39-gauge hose on 20-section machines.

## Among the Knitting Mills

ALABAMA HOSIERY MILLS, Decatur, Ala., recently placed contract with Bahnson Co., Winston-Salem, N. C., for complete humidifying equipment and a conditioning room.

Asheville (N. C.) Hosiery Co. are completing a $250,000 expansion program which will double the capacity of the plant.

The two-story addition to the Hoover Hosiery Co., Concord, N. C., is expected to be completed by September 1st. The building and machinery will cost around $200,000.

BEGINNING June 1, the D. S. & W. Hosiery Co., Reading, Pa., is distributing through a main sales office at 200 Fifth Ave., New York, in charge of Max Rounick, actively engaged for many years as a hosiery specialty jobber in Philadelphia, trading as the Ma-Ro Hosiery Mills. While exclusive distributor of D. S. & W. hosiery, women's full-fashioned and men's seamless silk and various constructions in the novelty field, Mr. Rounick will offer also the lines of several non-competing mills and will retain an office in Philadelphia. He states he will carry no stocks other than for the mill in Reading, which will maintain assortments at the New York, Chicago and Los Angeles offices. Until making this change, Mr. Rounick stocked the D. S. & W. lines with others in which he operated as jobber. His announcement indicates a change in wholesale merchandising policies that may have quite a number of followers, since the mill carries the stock for the jobber.

* * *

Avalon Hosiery Mill, Elizabeth City, N. C., is being revamped to manufacture chiffon hose with picot edge and cradle sole.

Marion (N. C.) Knitting Mills recently completed a 41x41-foot addition to their mill.

Dixie Hosiery Mills, Inc., Newport, Tenn., have been organized to manufacture women's fine guage, infant's and men's hosiery. Additional equipment has been installed in the plant formerly occupied by Lamons Hosiery Mill. The plant will be equipped with 57 knitting machines and dyeing and finishing equipment.

Virginia Maid Hosiery Mills, Inc., Pulaski, Va., will erect $20,000 additional unit, installing 15 additional full-fashioned hosiery machines, which will double the capacity of the plant.

It was recently reported that Asheboro (N. C.) Hosiery Mill would build an addition to its present plant which would double the floor space of the present mill. They state that 200 Model K knitting machines have been bought and are ready for installation. This will bring the total number of machines in the plant to 822.

With the installation of new machinery, Lake City Hosiery Mill, Marion, N. C., is adding a new line of manufactured goods. They will now manufacture men's fancy half-hose as well as boys' golf hose. They state that 20 Banner knitting machines, 4 ribbers and 4 loopers have been added.

McPar Hosiery Mill, Marion, N. C., has installed 22 new knitting machines, 7 ribbers and 7 loopers. This will increase the daily production by 150 dozen pairs of socks.

### A Bi-Metal of Steel and Nickel.

With the co-operation of the International Nickel Company, Lukens Steel Co., of Coatesville, Pa., recently developed a new product—a hot-rolled bi-metal of pure nickel and steel, which is being marketed under the trade name, Lukens Nickel-Clad steel plate.

One surface of the plate is completely clad with pure nickel during the rolling. The percentage of pure nickel can be furnished in various grades from 10 per cent up to 20 per cent of the total plate thickness.

It is stated that this new product provides the corrosion -resistance and other advantages of pure nickel, in combination with structural strength greater than ordinary steel plate, at a price that makes it economical for tanks and many other forms of heavy plate construction.

This material is completely described in a bulletin the company is publishing.

### Seraceta—A New Acetate Yarn.

Seraceta is the name of a new yarn being offered by the Viscose Company. The company states that already the first volume output of Seraceta has been bought up by leading manufacturers, interested in creating novelty weaves and brand new combination effects. It is pointed out that interesting new neckwear fabrics are also being launched, in which Seraceta is used alone or in combination with viscose process rayon.

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### A Bearing Handbook for Designers and Engineers.

"Ball and Roller Bearings—A Handbook for Designers and Engineers", is the title of a booklet recently published by the Aetna Ball Bearing Mfg. Co., 4600 Schubert Ave., Chicago, Ill., on ball thrust and radial roller bearings. A number of interesting applications of thrust and roller bearings, together with typical mountings for both types of bearings are shown, for carrying undirectional thrust as well as thrust from two directions. A number of valuable formulas for calculating horsepower, torque, the end thrust of worms and gears, and end thrust of bevel gears, plain, bevel, spiral and hypoids are presented.

:: :: ::

### New Magnetic Switches.

The General Electric Company announces the C R - 7006 - T - 5 Oil immersed magnetic switches for heavy car duty in controlling large sizes of motors. The new switches supersede the Jones Electric C R-7006-T-3, 150-ampere magnetic switch. The company states that they consist of a 3-pole, 200 ampere, oil-immersed contactor, a temperature overload relay, two current transformers and an undervoltage relay all mounted on a suitable floor mounted framework.

# ORIGINAL STYLING

**No wrap stripe machine has ever demonstrated such easy adaptability for knitting an almost inexhaustable range of new and original patterns. The pattern shown on this page, knit on the**

## BANNER WRAP STRIPE Machine

**was selected from the new fall line of the Great American Knitting Mills. The originality and beauty of the pattern design, and the perfection of finish is typical of Banner Wrap Stripe Hosiery.**

***Mills can afford to show a wide range of Banner Wrap Stripe Patterns because it costs so little to change patterns on these machines*.***

**Patterns can be changed in 50 per cent less time on the Banner than on any other wrap stripe machine.*

BANNER WRAP STRIPE MACHINES

**knit a perfectly plated body fabric with any yarns or combinations.**

**They have all the color changes and steps that are ever required for practical patterning.**

**Colors can be changed in every vertical if desired.**

**The machines are backed by more than three years successful mill experience.**

**Users are protected by Banner patents.**

***Shown here in black, white and gray, this pattern is made by the Great American Knitting Mills in a wide range of color combinations—all pure thread silk.***

**BANNER**

**HEMPHILL COMPANY**

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*General sales office and machine exhibit:*
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## Comments On Preventing Full-Fashioned Waste

**This man gives his system for eliminating excessive waste.**

EDITOR COTTON:

In reading C. H. BAXTER'S article, "Preventing Waste in the Manufacture of Full-Fashioned Hosiery," which appeared in the April, 1931, issue, I noticed he strongly stressed the economy of strict overseeing in the matter of press-offs. I would like to add some remarks on the subject, and also ask MR. BAXTER for some further suggestions concerning his remarks about collecting press-offs and having them sorted. Does he have the sorted press-offs raveled, when and where necessary, by the persons who sort the lengths, or are the press-offs returned to the knitters in sets with the expectation that the knitter will straighten the press-offs out to one raveled end before starting to top them on? We all realize that regardless of what is done in regulation of collection and disbursement of press-offs there is always some raveling to be done to make the set of pieces uniform, and my idea is to take care of that phase of the problem by having the press-offs go back to the knitter the correct length so that he must not have any excuse for ravelings in his waste receptacle beyond a reasonable amount.

Another point that I would like to mention is that when press-offs occur in the narrowings they should be topped on in the narrowings as near as possible to the point where it is possible to get a good finger hold for topping on. Many press-offs that occur at, say, the twenty-sixth narrowing in the leg, will be raveled down to be topped on at the place before the narrowings begin. However, an experienced knitter does not do that, and when he has learned to top on in the narrowings he will find that he saves time in the process, because if he stops to top on in the twenty-sixth narrowing he has 112 less needles to cover than he would otherwise have; three to three and a half inches of material is also saved.

Another interesting point covered in the article by BAXTER was that concerning the practice of not breaking out the heel ends when a leg is spoiled in the splicing or pressed-off in such a manner that it cannot be topped on and the knitter has no heels to top on. Many practical men allow the knitters to run their heel ends rather than break them out because of the time lost in threading them up. They prefer to lose the amount of yarn used during this time rather than the time and production that would be lost. Threading up the heel carriers while running the next set is not always practical on the seven and eight carrier machines. My experience has been that it is not often that a knitter does not have a few heels handy to top on in a case like this after having started in the splicing. Perhaps some of our cost hounds could give us the lowdown on the number of seconds lost in this compared to the cost of the material lost.

I know of at least one practical man whose rule about press-offs is that as soon as a knitter has two press-offs of the same length, he must lay out a needle bar at the beginning of the set and top the pair on at the proper place in the set. His knitters are closely followed up in this, and should the knitter have to ravel down an unusual amount, he must first show it to the foreman. This allows a check on any excessive amounts of ravelings in the waste receptacle, and also makes it imperative that the leg be pressed off as soon as a fault appears.

I certainly agree with MR. BAXTER regarding the spoilage of legs by toppers and footers. Entirely too much of this is encountered. Our system is to make an allowance to each topper of six legs over the amount of the lot upon which she is working. The person having charge of the issuing of work to footers is trained in check-up methods to keep the toppers' amounts straight. All spoiled legs must be suspended in a special place at each topper's table, in full view of the person in charge as she passes among the girls at the topping tables. Financial penalties are imposed when excess waste is shown in this particular operation.

Unless every topper and footer is trained strictly in the care of waste, topping and footing will certain-

**WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.**

ly create a sinkhole for profits. We found that doing away with helpers on the footers, keeping only enough helpers on the footers to fill prospective needs, was a very economical step.

Our lot system calls for five dozen to a lot, and no goods are accepted in any other way, excepting sample items and press-offs that have been topped on, these being handled separately with colored tags. When a five-dozen lot is issued to a topper the footer must turn in a five-dozen lot for it. Each footer works on a 15-dozen basis, each topper on a five-dozen basis, and any time a check-up is found advisable, the person responsible takes inventory of the total goods of the footer in question. If the footer's inventory is correct, it will check up as three lots with six stockings over for the toppers. Some of the six "overs" may be in the form of spoiled legs or raveled heels to be returned to the leggers. If the unit composed of the footer and toppers does not have the correct amount, the machines are stopped and correction must be made before the unit can be operated again. We have found these check-ups to be a very effective means of causing the operators to realize the seriousness of losses. We have found that most of our confusion occurs in the footing operation.

We try to instill in each of our footers the thought that he is the head of a manufacturing unit, and as such, we expect him to be responsible for its management.

I have found that the waste bins and bales are not the best places to watch in order to prevent waste. Waste can only be stopped by catching it in the beginning, not after it is baled up.

CONTRIBUTOR No. 5041.

## Plaiting 5 Thread Over 120's on 42-Gauge

EDITOR COTTON:

There is little experience in circulation relative to the specific problem of plaiting 5-thread 15 turns silk over 120s or similar gassed yarns, in making full-fashioned hosiery, as brought up in one of your issues by "CONTRIBUTOR No. 4973." The recent demands for high production, along with novelty effects, have somewhat dimmed the qualities of a plaited stocking. Frequently, plaiting does not lend itself to the manufacturing scheme, and we often find a case where it is cheaper in many ways to produce an all-over silk stocking, desired by many in preference to the plaited stocking.

The recent trends toward plaiting are primarily induced by market conditions and manufacturers' positions, the manufacturers being more willing to seriously manufacture than in the recent past because of decreased general demand in the industry for all types of goods. The re-appearance of plaiting as a general method finds new problems in the use of not only lighter tram but high twist tram, whereas a few years back, plaiting was largely concerned with heavier tram of 2 or 3 twist, all of which are given to better coverage than the present standard trams.

We have had experience similar to that of "CONTRIBUTOR No. 4973," however, our 5-thread silk was twisted only eight times, where his has a 15 twist. But this is a significant point due to the fact that the increased liveliness of high twist tram is apparent even in straight knitting, and the tendencies to crinkle certainly do not aid correct even laying, which is so necessary in plaiting.

The points foremost in our experience are: The correct choice of yarns, giving attention to quality and proper size for the work, and the ultimate conditioning prior to knitting, because if the silk is allowed to become too dry, the incident liveliness will cause misplaiting and poor coverage.

Much also depends upon the machine—its condition and speed. Plaiting is best done at a slow speed, but this varies, and the proper speed is largely one of judgment and experience in connection with the machine. The slow machine minimizes vibration, which is a cause for misplaiting, and also allows the carriers to run smoothly and without jerkiness. Vibration and jerkiness cause the yarn to be drawn from the cone with a varying tension, and this also makes for misplaiting.

In our case, we let the plaiting carrier run about ¼ of an inch ahead of the sinkers, and this carrier should also be watched to see that it is not too high above the sinkers. Another thing we have found helpful is to use as little rocker as possible. We might suggest trying a heavier silk for heel and toe. We believe that we have received benefits from loosely wound cones and proper attention to the yarn tensions.

CONTRIBUTOR No. 4983.

## Causes of Bad Sizings.

**A further opinion on how to prevent this trouble in making hose.**

EDITOR COTTON:

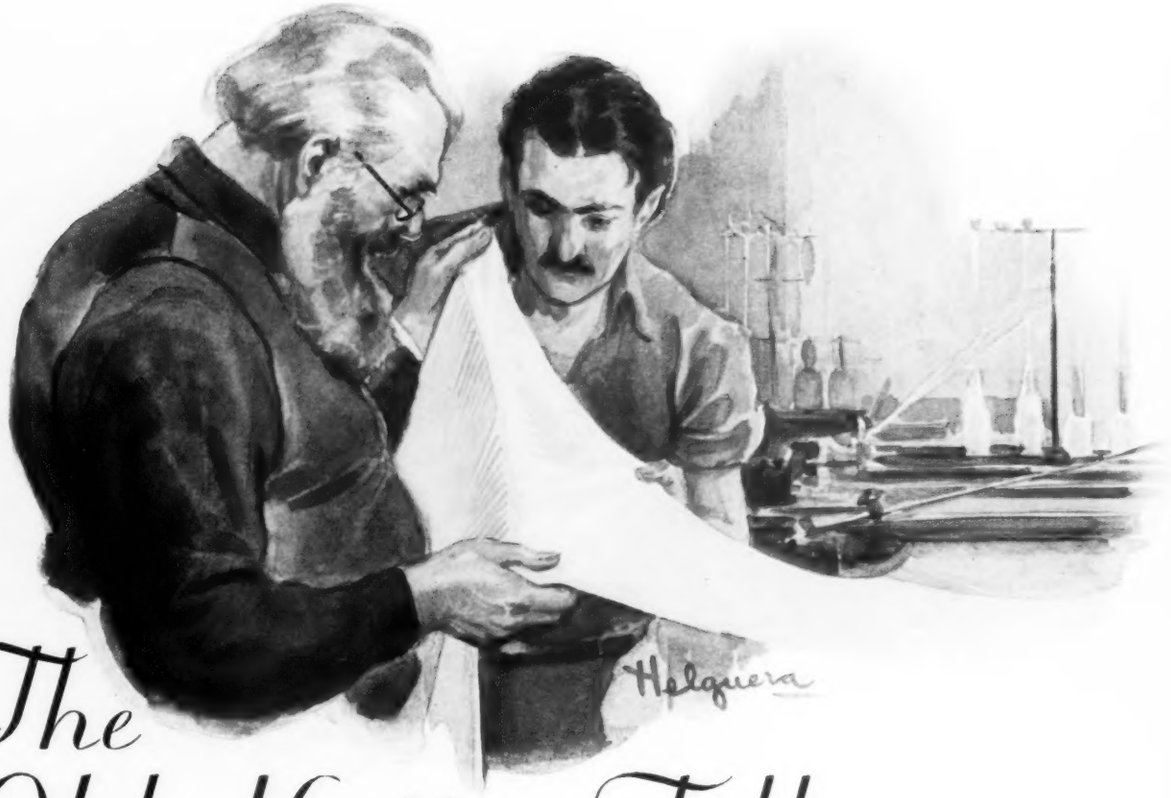
In answer to a question that was recently asked in COTTON concerning trouble with bad sizing in hose knit from rayon and Celanese yarn, I will say that we have very little trouble with hose knit from these yarns.

All of the Celanese is run through ballooners without tension. Of course this is only possible where the rayon is plaited over Celanese. Some time back we had quite a bit of trouble with bad sizing, but discovered that it was due to bad winding on tinted Celanese. Assuming the knitting machines are in good condition and the winding is good, very little trouble of this nature should be had.

There are several probable causes of uneven sizes on the knitting machine, among which are the following: the cylinder sticking, thus failing to go all the way down; loose stitch cams, which happens quite frequently due to screws working loose; bumper screws on the sinker ring becoming loose.

It often happens when a machine is sized with a full cone of yarn that after the cone is partly used the hose will be larger. This is due to the fact that more drag is placed on a full cone than on a smaller one. By careful observation the fixer should notice this and size the hose several times for each cone. In fact, I find this is a good plan to follow with all yarn.

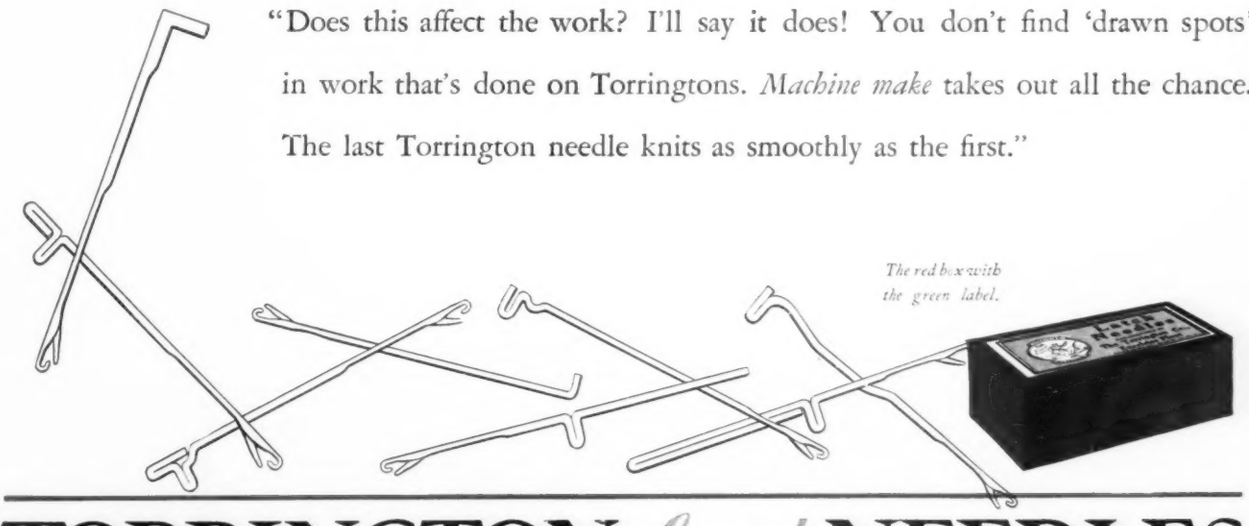
CONTRIBUTOR No. 4851.




# The Old Knitter Talks

"Torrington Latch Needles? Say, boy, *there's* a help in this knitting business. Whether you open a box or a shipment, you know every single needle will be exactly like all the others!

"Does this affect the work? I'll say it does! You don't find 'drawn spots' in work that's done on Torringtons. *Machine make* takes out all the chance. The last Torrington needle knits as smoothly as the first."



*The red box with the green label.*

## TORRINGTON *Latch* NEEDLES

# *Only a Machine can measure* SPEED

Mile after mile, the speedometer registers rate of speed . . . with exactness, because it is mechanical. And in the machines which make Torrington Spring Beard needles, there is this same *precise* character.

Day after day they produce Torrington needles without a single variation from the perfect standard. To knit with Torringtons is to be *sure* of results.

*The red box with the green label. Packed 1000 to the box. Each box contains 10 packets of 100 needles wrapped in glazed paper.*

*The Torrington Company*

ESTABLISHED 1866

*Torrington, Conn., U.S.A.*

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# TORRINGTON

## *Spring Beard Needles*

## Getting a Clean Transfer.

EDITOR COTTON:

Getting a clean transfer of the set-up stitches on Model K machines can be a more or less troublesome problem. By a clean transfer is meant even transferring of the loops from the transfer jacks to the cylinder needles without threads snagging on the nibs of the transfer jacks, or leaving loops unfastened.

The finer the gauge, the more pronounced this trouble is, due of course to the closer adjustment necessary.

Although the transfer loops are on the inside of the hose, and cannot be seen on the finished product without turning the hem, the quality standards of the manufacturer depends on the results expected from the knitting department.

The formation of these loops at the start of the set-up is the first fundamental of a clean transfer. As every other needle is drawn down out of action, and the transfer jacks come out where these needles are drawn down to take the yarn for one complete revolution of the transfer dial, these transfer jacks must come out separately in the center between the two needles on each side of it. Otherwise, trouble results, such as uneven feeding of the yarn to the nibs of transfer jacks and breakage or bending of these nips to one side. This will cause missed or cut loops at the transfer.

The purpose of the two adjusting screws on the large bevel gear, (5555) is to set the dial back or forward, the purpose being to align the transfer bits with the cylinder to prevent the trouble just explained. It is always good fixing practice to check up the alignment of the dial with the cylinder when trouble of this nature develops. This is done by taking the machine through by hand at the set-up and transfer and noticing the relation of the nibs of transfer jacks to the needles as they go through and take and transfer the yarn, and then making the necessary adjustment to the adjusting screws on the bevel gear.

If the nibs of the transfer jacks do not come out in the exact center of the needle, there is a tendency to overthrow in both the transfer jacks and needle when going through by power, which may result in a needle, instead of going through the jack, going through the side of it, which, of course, causes a missed loop. This is especially true where the transfer jacks and needles are not in a perfect line.

Too much stress cannot be put on the importance of keeping the transfer jack bits straight, along with the cylinder needles, as a means of preventing this trouble. These transfer bits must be straight both when out of action and when in action. A good way to check this over is to raise the dial cap, push down on the dial lever which pushes the transfer jacks out at the set-up, turning the transfer dial at the same time, until one complete revolution is made. By so doing the transfer jacks will be projected out of the dial the same as when in action and the nibs of the jackets which need straightening can be readily seen.

Care should be taken as to the friction which is applied to the transfer jacks as they are put in the dial slots. These transfer jacks as they come from the manufacturer generally have the proper friction; however, experience has taught us that this is not always the case. Transfer dials which have been in use for some time eventually wear the slots, which means slightly more friction must be applied.

Transfer jacks that do not have enough friction; that is, those that slide in the slots freely, have a tendency to overthrow and make the transferring uncertain. Too much friction, where it is necessary to force the jacks out with pressure, results in the dial pulling to one side, which causes undue wearing of the butts.

The feeding of the set-up yarns to the cylinder needles and transfer jacks during the period of the make-up, from the time the yarns first drop into the

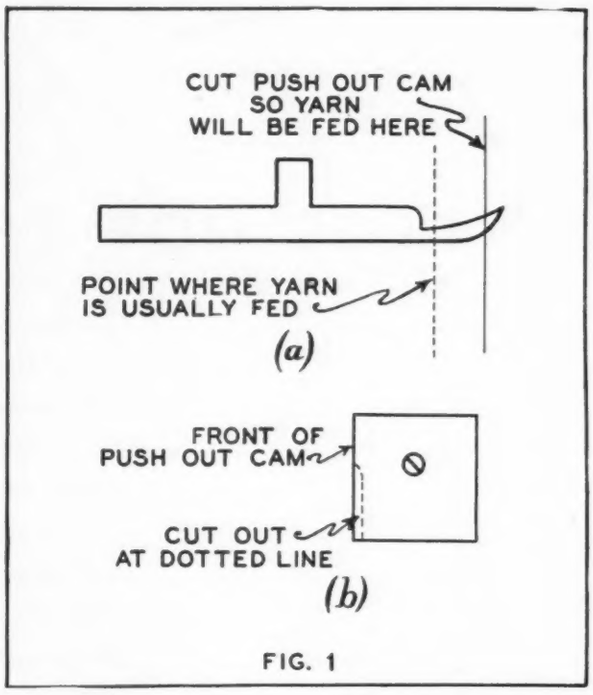
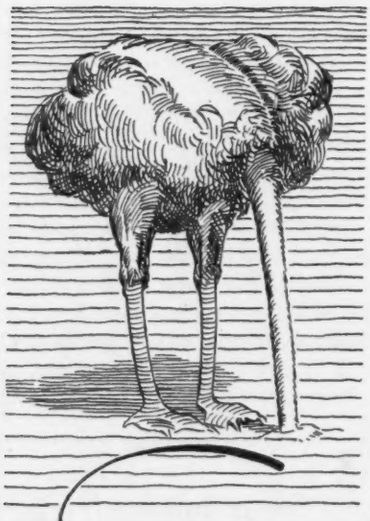



FIG. 1

throat plate until the make-up is complete and the machine resumes the regular knitting of the hem, of course has an important bearing upon a clean transfer. The yarn fingers, the throat plate, the push out transfer jack cam and the latch opener all play an important part.

The throat plate being the means of feeding the yarn to the needles and transfer jacks, it should be set fairly close to the needles, leaving enough clearance, however, to prevent the front edge of the throat plate hitting the hooks of the cylinder needle when the latch ring is raised. If the throat plate is set back too far, it has a tendency to pull the yarns away from the hooks and needles and jacks, resulting in overthrown loops at the set-up.

Taking it for granted that the throat plate is set up correctly, the yarn fingers should be just long enough to clear the hooks of the cylinder needles as they go in action, and positioned in the throat so there will be no possibility of the yarns getting pinched at the point of slope on the left stitch cam, where the latches close as the needles take the yarn. If the yarn does seem to get pinched, possibly the slope on the stitch cam is



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not full enough. The remedy is to put in one which will draw the needles down sooner.

The push out jack cam, which pushes the jacks out to take the yarn at the set-up, should be watched very closely. In taking the machine through by hand, anyone should watch the nibs of the jacks as they take the yarn. I have found it advantageous to cut the front end of the push out jack cam so that as the yarn is fed to the nibs of the jacks it will feed to the slope of the nibs of the jacks as shown at *A*, Fig. 1. By cutting a trifle off the front end of this cam (see *B*, Fig. 1) the jacks do not push out quite so far, getting the effect just explained. The advantage in doing this is that by feeding the yarn to the slope of the nib of the jack this slope has a tendency to roll the yarn back under the hooks of the cylinder needles, making a missed loop of the yarn less likely to occur.

However, care must be taken not to take off too much on the push out cam, because if this is done the jacks will not come out far enough to take the yarn.

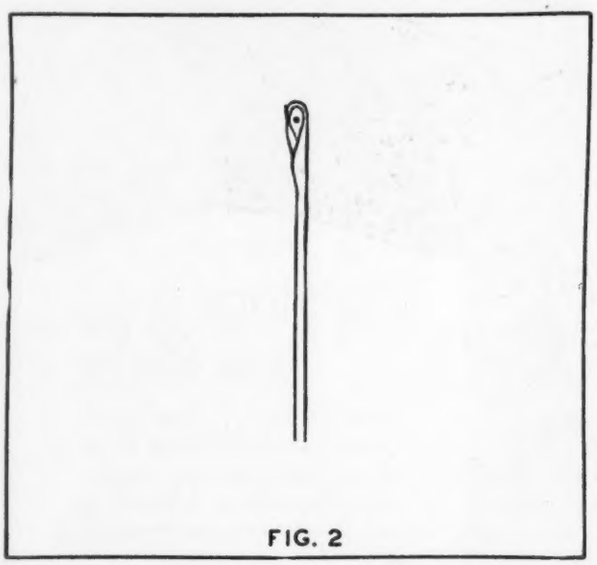

FIG. 2

Instead of helping the situation, this will make it worse. I would even advise anyone to leave the push out cam alone if the machine is giving no trouble.

The mechanical latch opener or brush, whichever is being used on the machines to open the latches, also has a direct bearing on mixed loops at the transfer. As the hose drop from the cylinder these latch openers keep the latches open until the yarns are fed to the needles at the beginning of the next set-up, at which time they are not needed and are then brought out of action. However, when in action and not set properly to the needles, a latch or two will remain closed, resulting in those needles not taking the yarn at the set-up, which in turn will cause mixed loops. The point of the mechanical opener should be set to the needles so that it does not rub the needle in any way. It should be set so that the point comes near the center of the opening, as is shown by Fig. 2. As this latch opener is easily adjusted forward, upward or downward, this adjustment is easily obtained.

The adjustment of the welt presser also has a bearing on the kind of transfer made. The main function of the presser being to keep the hem worked down underneath the dial and to keep the loops on the transfer jacks until time for the transfer. In adjusting the presser it should be made to go in about ¼-inch underneath the transfer dial. If it is set in further than this, the presser will have a tendency to work the loops off the transfer jacks before the time of transfer. If it is not set in far enough, the hem will get puckered up. The spring on the presser must not be too stiff, for it will have a tendency to cause the presser to cut or knock off loops from the transfer jacks during the period of the set-up. It should be seen that the front edge of the presser corresponds to the sinkers as it is pulled out of action, and also that it rubs evenly between the dial and cylinder.

There should be just enough play between the top of the cylinder and the bottom of the transfer dial to allow the transfer jacks as they come out into action to do so with the bottom of the jacks hitting the tops of the sinkers in the cylinder. It should be kept in mind that the dial should be run as low as possible without having the transfer jacks bind. The reason for this being, the lower the dial, the shorter the loops of the transfer jacks and also the less strain the set-up yarns will have on them during the making of the set-up. If the dial is run so low that the jacks rub the tops of the sinkers, cutting and snaggin of the loops will result at the set-up and this is what we wish to prevent.

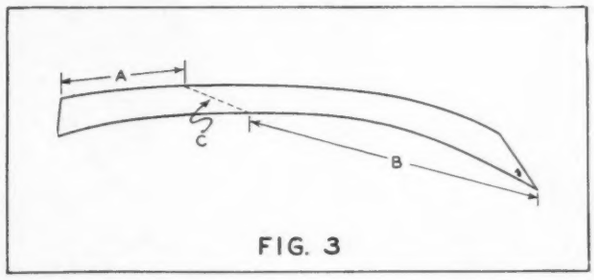


FIG. 3

Where the set-up stitches appear loose and ragged and the loops appear large, I have found a change in the drum cam tension control to prove advantageous.

The standard drum cam tension control on the Model K machines for the set up and inside of the hem is generally controlled by a ¼-inch drum cam, this drum cam having effect upon the set-up and the inside of the hem from the tension control screw.

In order to get smoother set-up stitches and a cleaner transfer, the drum cam should be cut as shown by Fig. 3. In Fig. 3, *A* represents the part of the cam which controls the inside of the hem; *B* is the part where the set-up adjustment is made by the cylinder tube screw; and *C* shows how the cam should be cut. It should be cut off on the dotted line. The purpose of cutting the cam this way is to cause the tension control to be obtained from the cylinder tube adjustment at the bottom of the cylinder tube, during the making of the set-up and until the transfer jacks make one complete revolution. This permits a tighter stitch during the set-up. Then after the set-up is complete the last kick brings the tension control back up on the drum cam, which stays there until the inside of the

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hem is completed.

While going through the set-up and transfer changes, the machine should be thrown to low speed by the belt shifter. Otherwise, set-up trouble will be experienced. Speed, of course, is a factor governed mainly by gauge and must be correct for best results to be obtained.

CONTRIBUTOR No. 4915.

## Answer on Wrap Stitch Questions.

EDITOR COTTON:

I notice that "CONTRIBUTOR No. 4841" is having trouble with wrap stitches. In the October issue he says that he is making fancy rayon hose, using 200 denier rayon with 80s/2 Emmunize, and is having quite a bit of trouble with his wrap stitches. He says that the majority of his trouble seems to be in the yarn changes, and that he is getting cut threads here in many instances.

I had to put up with this for a long while, but after putting an attachment on the machine that would allow the yarn to enter the machine nearer the fingers, I obtained much better results with my wrap stitches. I also found that this gave me much better plating results.

It may be that someone else has tried this same thing. If so, I would like to hear just what results it has netted them.

CONTRIBUTOR No. 4903.

## "Off Shades" On Silk Hosiery.

Says this is not likely caused by mixing freshly-knit and stored goods. What is your experience?

EDITOR COTTON:

In the "KNITTING KINKS" section of a recent number of COTTON, there is a query and appeal for discussion on a subject that is both timely and interesting.

A correspondent is troubled with what he calls "off shades" on dyed batches of silk hosiery, and wonders how many more hosiery mills may be troubled in the same way. He, also, states that after having gone through a very thorough investigation to find the cause of the trouble, he finally discovered that the trouble "cropped out" mostly when dyeing up batches of hosiery consisting of freshly-knit hose and hose that were knit a week or so previous to dyeing.

Now, this correspondent is to be commended on being willing to start an investigation of his own but he surely did not go through with it as thoroughly as he believes he did. He merely found that some hosiery he had in stock dyed off-shade when dyed with some hosiery that was put through soon after knitting it, which finding has some value because now he believes that he must dye his stock as soon as knitted to avoid off-shades, but while that could be done some time ago when only a few shades were the fashion and a large stock could be kept ready against orders, the stock today must be kept low and moving, or shades will become obsolete.

But what would he think if he should find that in spite of putting his hosiery through the dyeing as soon as knitting, he still had some off-shades in his batches? The writer has had the same trouble, and one day while looking through a lot that was boiled off and ready to dye, found some hosiery that showed yellower than the rest, and one stocking that had both clean and yellow silk knitted in it. As the hosiery had all been knitted with White Japan silk there was the evidence that the age of the stocking had nothing to do with the off-shade dyeing. The trouble was to be found elsewhere.

There is absolutely nothing in the raw silk that will cause it to deteriorate with age except that it has to be kept in a properly conditioned atmosphere. Silk is bought in trainloads and stored for months, and even years at a time, as at the present when the price of silk is so low, and released when prices start climbing, and this writer never heard of silk having gone bad on account of long storage.

The reason silk deteriorates and causes off-shades in hosiery as well as in other fabric where silk is used may be found in the treatment it receives at the hand of some mill operator. The silk received by the knitters has been thrown and put on cones. In throwing, silk has to go through several operations: winding, doubling, and twisting. Twisting is done in some cases, like for grenadine and crepe yarn, before and after doubling. In order to go through these operations with the least amount of trouble in breakage, stop motion, etc., and to deliver thrown silk in the proper condition for further operation—knitting, weaving, etc.—the hard silk, reeled from the cocoon, has to be rendered soft and pliable by soaking in a softening bath for a time varying from two to twelve hours, according to the needs and ways of working of the throwster.

Up to some years ago this soaking was done by immersing the hard raw silk in a solution consisting of olive soap to which was added some olive oil, glycerine, or neatsfoot oil to keep the silk hygroscopic, that is: able to retain moisture for as long as possible, and with the silk thrown in those days there was hardly any variation when dyeing it, regardless of whether it was dyed the day after thrown or months afterwards. The only thing to guard against was that no yellow gum silk was worked in the fabric with white gum silk, or Canton and Bengal silk with Japan or Italian silk, each and every one having its own characteristic.

Then some years ago chemistry came to the aid of the throwster to enable him to get better results in softening his hard silk more economically in the shortest time. To help him do away with the antiquated formulas and methods that had been in constant use for many, many years, and in a short time many preparations were brought to the throwster and the knitters, each better than the last one until today there are so many softeners, lubricants, and emulsions—for each of which there is a claim of its own—to bewilder the throwster and the knitter so that it is hard to decide which is good, bad or indifferent. Some of these preparations are really of benefit, but the trouble is that for some there is no such claim except in the persuasive talk of some highly-trained salesman, and the pity of it is that both throwster and knitter are not the ones to find out the final outcome of a preparation that

may have given good results in the throwing, or the knitting mill. It is when the goods are delivered to the dyer that the final conclusion may be reached whether what has been used in softening and lubricating silk was a good preparation or the other kind.

This is not written as an insinuation that any softener or lubricant is purposely made up and put on the market to defraud, for undoubtedly each preparation may have its merits, but while one may be of great help in keeping the silk in the proper condition while in throwing or knitting, it is the after-effect when the fabric is processed and finished that shows whether the preparation is a proper one, or one to be left alone, as far as silk is concerned.

There is not the slightest doubt in my mind that when a mineral oil is used in softeners for silk, when the finished fabric may come out in first-class shape, provided that the silk has been kept by itself and the whole batch worked in the dyehouse and contains only silk that has been processed in the throwing plant using that preparation. But let the knitter use silk regardless whether it has been thrown in Chicago, Philadelphia, or some other place—just because it is the same size and number of threads—and the silk prepared with a mineral oil solution, it will most certainly show up, after it is boiled-off, a different shade than the silk prepared with the vegetable oil preparation; the subsequent dyeing will also show different shades throughout the batch, dark and light stockings, just as this contributor complains of.

Dyeing as soon as the hosiery is knitted may help some, but will not correct matters, as can be seen by the illustration. This stocking was found in a lot that was dyed as soon as received from the knitting room, and two shades can be plainly seen in the leg of it. What caused that? Evidently that is the result of having knitted the first half with the end of a cone, and the other half beginning a new cone, or the silk may have come from the same cone filled with silk from two differently prepared yarns. In either case, one of the yarns had been prepared with some solution that caused an undue oxidization on the fiber, and caused it to dye differently, and that is the evil we are all trying to overcome.

Let us hear more about it. There is here some worth-while work for some earnest investigator to get at the bottom of this matter, and when this knotty problem is solved we will begin fighting something else that may even now be lurching invisible around the corner.

CONTRIBUTOR No. 5052.

## Seaming Thread for Service Weight.

EDITOR COTTON:

In a recent issue of COTTON, "CONTRIBUTOR No. 4908" asked for information as to the best size and kind of seaming thread to use for service weight full-fashioned hosiery. He said that he is using 80s/3, but encountered difficulty with drop stitches on the seam. We have found, by conducting wear tests, and from actual experience, that for seaming service weight hose, an 80s/3 yarn is a very good yarn to use. It not only gives a nice appearing seam, but also gives excellent wear, which is of course necessary in a hose of this kind. If a finer yarn is used, the seam will invariably break before the hose is worn through, thus resulting in complaints.

CONTRIBUTOR No. 4930.

## Causes of Bad Sizings in Hosiery.

EDITOR COTTON:

I would like to discuss the question, "What are the possible causes of bad sizing in rayon and Celanese constructed half-hose?", which appeared in a recent issue of your magazine.

We have experienced difficulty with the yarn running very un-uniform from the cone. Unless these yarns are kept in good condition, they have a tendency to stick to the cone, which condition is aggravated as the cone becomes smaller in size. If air moistening equipment is used, we have found that frequently the cones on the machines will be found to be saturated in the morning, after being left on the machine over night, and will tend to run considerably wetter than those taken out from the bins.

CONTRIBUTOR No. 4827.

EDITOR COTTON:

I would like to discuss the questions recently submitted by one of your contributors as to the possible causes of uneven lengths in half-hose made of rayon and Celanese. It has been our experience and observation that more uneven lengths result from other causes than from the setting of the machine. It is possible, of course, to make uneven lengths when the end cams are not set up snug, leaving just room for the needle butts to pass between the stitch cams and end cams. It is also possible that a machine might be drawn with a belt not tight enough to drive it at

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an even speed.

I am inclined to believe, however, that the uneven lengths complained of are caused by the winding of the yarn. If a cone that has been wound real tight is put on the machine, no doubt a different length of stocking will be made from a cone that has been wound loose. A stocking made of Celanese and rayon is a plaited stocking, and varying lengths could be caused by tension used on the facing yarn. For instance, the rayon yarn being run on the fact of the hose. If the disc tension is used, the disc cam becomes loosened by particles of fiber getting lodged in between the disc, which would make the tension loose and consequently result in a longer stocking.

CONTRIBUTOR NO. 4826.

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EDITOR COTTON:

This is in response to the inquiry you recently published as to the possible causes of bad sizing in rayon and acetate rayon constructed half-hose.

The causes of bad sizes in rayon and acetate rayon constructed half-hose are due to so many varying conditions that only a few can be pointed out in a brief discussion.

First, there are sizing difficulties caused from the quality of the yarn. The remedy for this of course is to use only first quality yarns that are within the bounds of allowable variations as to count, and that are supplied by reliable manufacturers who stand back of their merchandise. Otherwise, if second quality or inferior yarns are used, continual checking up of the size is necessary and one must be satisfied with a happy medium between tight and loose work.

Second, there are sizing difficulties caused from the treatment of the yarn, such as tinting and oiling. Various treatments of known good qualities must be tried under each individual mill condition, to determine what is best suited to these requirements, such as oiling, tinting, etc.

Third, there are sizing difficulties caused from the winding and type of package from which the yarn is knit. If the winding is handled in the plant or organization by which the yarns are to be knit, the leading manufacturers of these yarns can supply the best service for working out of the winding difficulties as they have done much research work along these lines and can supply first-hand information, for reducing troubles to a minimum. In fact, this difficulty and the ones in the previous paragraphs are at a minimum if first quality yarns are used in the finished package form from the leading manufacturers.

Fourth, there are sizing difficulties from the knitting room operating conditions, such as humidity, temperature and weather conditions. Sizing difficulties can be held to a minimum if the knitting is under uniform knitting room temperature and humidity and there is a minimum of interference from draft and vibration.

Fifth, there are sizing difficulties from the knitting machine standpoint depending on the condition of the knitting machine, type of pattern and set-up. Minimum sizing difficulties from the machine standpoint will be secured only by those having the knitting machine in first-class condition in every respect. The machine should be steady, that is with as little vibration as possible and should be run at a minimum speed, not too fast nor too slow, with minimum belt slippage. The machine should be in a snug running condition, that is, not loose, and the cylinder cams and moving parts in such condition as they will stay adjusted.

Each of these five difficulties is a problem within itself, and this is merely an outline of a basis from which to work. Each individual difficulty should be determined and worked out step by step until satisfactory results are obtained.

CONTRIBUTOR NO. 4829.

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EDITOR COTTON:

A recent contributor desired information as to the cause of uneven sizing, using rayon and Celanese yarns on half-hose machines. If I understand his query properly, he refers to uneven lengths of the hose as they come from the machines, using these yarns.

The writer's experience has been with the Scott & Williams K machines, using these yarns, but I believe that the causes of these uneven lengths would be the same in principle on a half-hose machine, so this answer is given from that standpoint.

Uneven sizing comes mainly from two sources: the machine itself and the yarns being used. Due to the construction of rayon and Celanese yarns, it has always been a problem with us to get satisfactory results. This trouble was more evident to us in the past, when these yarns first made their appearance. The quality and durability of the yarns at that time was such that to secure satisfaction from the standpoint of knitting was difficult.

Today, however, these yarns, which are made by reputable manufacturers, have proven very satisfactory, and our trouble of uneven lengths are such as to be unnoticed.

Taking it for granted, then, that the yarn itself is uniform, the adjustments on the machine determine the lengths.

Uneven lengths on a Model K machine (the same principles are generally used on half-hose machines) are the result of several sources. The left side cam may be too far away from the stitch cam, causing too much overthrow of the needles as the stitches are being knit. This side cam should be as close to the stitch cam as it will go without scraping.

The cylinder may be sticking, and not dropping down to the lowest level during knitting. The cylinder needles may have too much friction, causing dragging of the needle butts. The yarn tensions, if any are being used, should be adjusted so that the spring or disc does not revolve, as this causes a variation of tension between the discs, as the yarn passes through. Variation during the day of the speed of the machine, caused by motor or power, is a cause of such trouble, although probably not likely in this instance.

The yarns should not be hindered by too much friction, and should have a free delivery from the cones, using ballooners if necessary.

CONTRIBUTOR NO. 4821.

# RIGHT DOWN THE LINE

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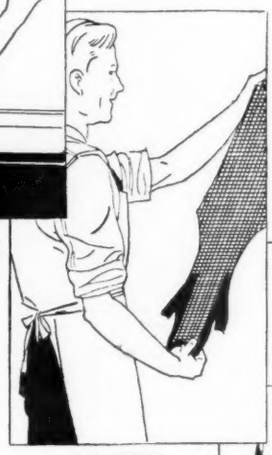

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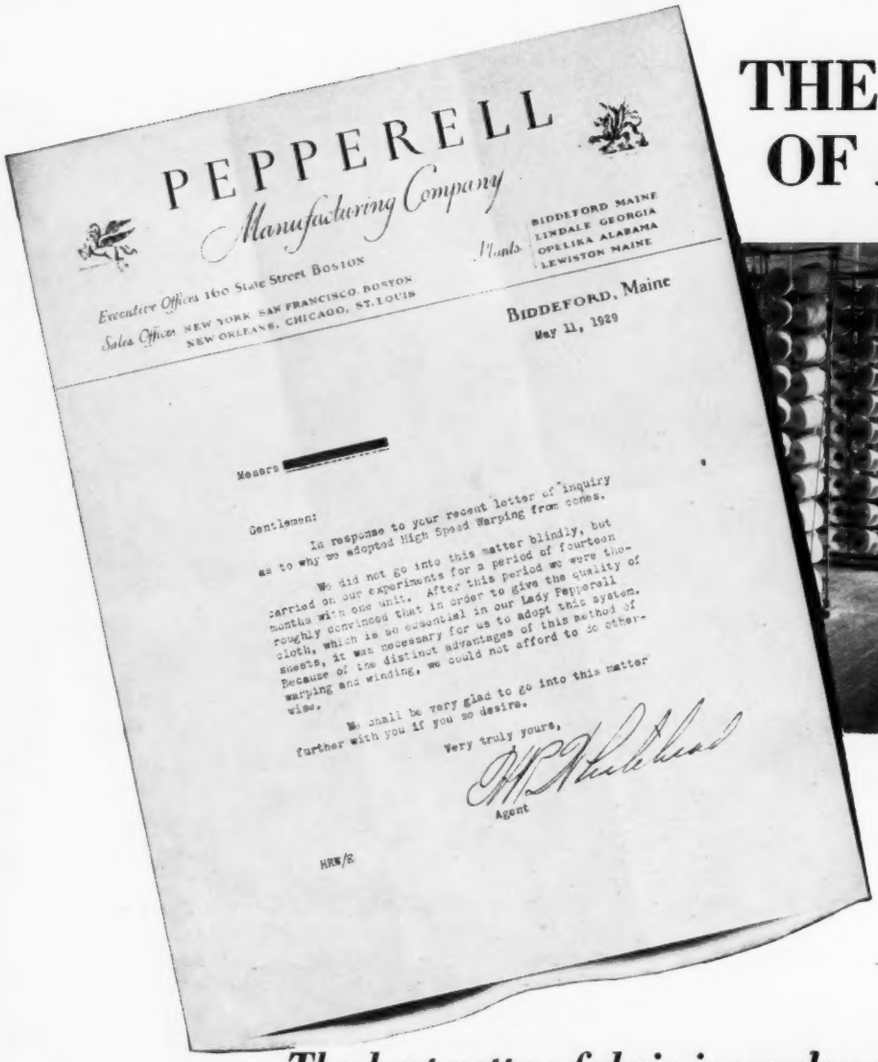

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We shall be very glad to go into this matter further with you if you so desire.

Very truly yours,

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# UNIVERSAL WINDERS

# The KNIT GOODS MARKETS

IT WOULD APPEAR from April production and marketing statistics that manufacturers as a body did not give serious thought to the commonly accepted conclusion about this time of the year that demand for hosiery undergoes a radical decline during the summer months, and the effect of style changes in women's silk numbers appears to have been given only passing thought.

Retailers—practically all of them—tell of a deep and growing interest in mesh and lace top stockings. If their assertions as to alleged popularity are accepted at their face value, it would have to be assumed, say market factors, that standard plain silk stockings represent a large part of the stocks in mills. Such an assumption, it is pointed out, is supported by low levels of prices for types of stockings that tell of too thin a margin of manufacturer's profit. And some large dealers in June were taking the stand that July and August prices would go to a still lower plane. Numbers of manufacturers were planning in June to avert such sheer drops as had been witnessed during the latter part of 1930.

It was believed that, although output were curtailed materially, presence of distress stocks of plain standard numbers might operate seriously to disturb the markets. It is instanced also that while these stocks or any large part of them are hanging over the market there will be further tendency on the part of mills to reduce operating cost. Little relief in this respect is seen in raw material values, with silk, cotton and rayon at record low price stages, and wool in a like position under the most favorable appraisal.

## Mesh Hose Demand Well Sustained; Trade Warned of the Cut-and-Sewn.

JUNE DELIVERIES of mesh hose were well sustained at the season's peak, and it appeared there existed an unfilled demand. One explanation for this favorable position for mesh goods is that only a comparatively few manufacturers had the temerity to equip plants for more than a very conservative production. Full-fashioned interests seemed to fear a flooding of the market by seamless mills, to which the mesh fad meant orders and profits—while the vogue lasted.

The latest entrant in the mesh field was a cut-and-sewn stocking, made after the manner of the one-time glove silk number that was expected to compete with the flat knit. How many concerns are buying mesh fabric in the piece and converting it into stockings is probably not known, even among those who are employing only sewing machines for producing mesh hose.

One manufacturer, at the suggestion of a merchant seeking a well-knit and good-appearing mesh stocking to sell for lower prices than are commanded for the full-fashioned, showed a laboratory sample a few weeks ago. The merchant who supplied the inspiration for the experiment pronounced it "encouraging," except that it seemed too costly mechanically to be sold profitably in competition with either very high-grade seamless of average grade full-fashioned. It was proposed to knit full-fashioned tops and soles for the innovation. The cut-and-sewn mesh stocking is still a hope of its creators.

There is apparently no surplus stock of mesh stockings, and with so many manufacturers seemingly doubtful of long continued interest in them, it is unlikely there will be any accumulations in the event of the fad waning. They have had about all the publicity that might be given them, while lace tops are moving toward the center of the stage.

A manufacturer who went through considerable experimentation in the production of cut-and-sewn mesh stockings, says "do not undertake it." It is utterly impossible, he says, to sew and loop in coarse mesh and that as every merchant looks upon mesh stockings as liable to pass out on very short notice, they would be hesitant to put any of the cut-and-sewn in stock, as it would probably be the first of the mesh goods to drop out.

### Lace Tops on Seeming Rising Tide.

Lace tops have been exalted by announcement of the Ajax Hosiery Mills that its patented number will be manufactured under royalty by the Berkshire Knitting Mills, the latter and the Ajax apparently having joint control of the patent. Further exaltation for lace top stockings resulted from the filing of a suit by the Strahan mill in Philadelphia against the Ajax and the Berkshire—not for infringement, but for $1,000,000 damage to the Strahan business by reason of the fact the Berkshire-Ajax implied suits were necessary for protecting the Ajax patent. As in the case of the grenadine stocking when first it was presented, by a southern manufacturer, as introducing dull finish silk for hosiery, lace top sales are being promoted by the publicity given to the circumstances involved in the Berkshire paying a royalty to Ajax, and the subsequent suit by the Strahan organization. Lace top mesh stockings, it has been suggested in the trade, might prove a combination that would be hard to resist as a number adapted to the higher price brackets, where, it is admitted, something is needed to halt the inroads being made in the strictly legitimate field by goods starved of silk and misrepresented irregulars.

With demand developing for lace-top full-fashioned hosiery, it is stated in the machine trade that several important mills are, for the first time, styling full-fashioned with tops in wrap stripe design in delicate patterns and carefully blended colors. Some of the creations in this field are made up both with the flat fabric and the welt and turn-over tops of silk with light lisle reinforcement. These tops are shown with small vertical designs encircling the leg, making for a wide range of designs and color harmonization. As

will be seen from even a brief and incomplete description, the wrap stripe fancy top is distinctive, and some traders say they look for interesting developments.

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There has been manifest recently a revival of interest in used Model K machines and a considerable number were purchased by mills which, it was stated, intended using them for making women's mercerized hosiery. That there may be a demand trend in women's mercerized seems to be indicated in the April production of cottons, including mercerized—an increase of almost 20 per cent over the corresponding month of last year.

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Much interest is manifest in the outcome of the action of the Berkshire Knitting Mills in announcing several weeks ago that all of its irregulars will be so stamped on each stocking, thus heading a movement for depriving retail stores of irregulars to be sold as first-class to unsuspecting shoppers. Several organized movements to this end in the last few years failed for the reason, it was alleged, that most manufacturers who had subscribed to the plan changed their minds and returned to the old method of disposing of their first and lower grades to advantage.

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The better irregulars of standard types of hosiery are going to establishments which are regular patrons of mills producing hosiery in general repute for honesty in fabric and construction. By the time the substandard goods are distributed among the patrons of such a mill there are none left for speculators and snipers, and with prices for first-grade so low that it may be difficult for retailers to dispose of sub-standard irregulars, buyers for the cheap retail trade are more captious in their selections.

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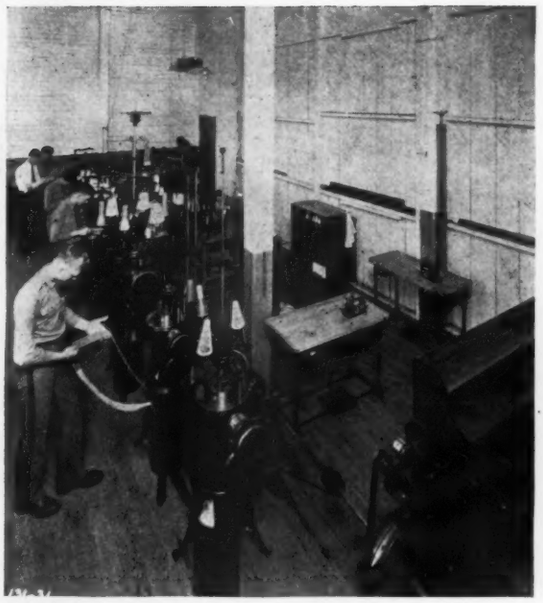

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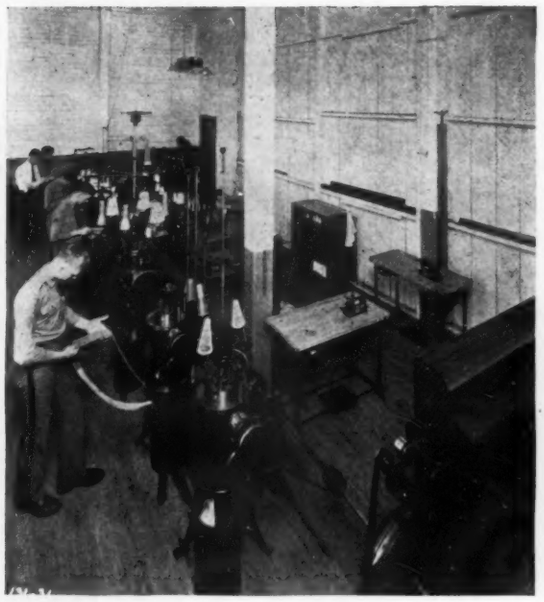

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# She's still buying stockings

# —millions of them!

It's a habit she acquired when the full-fashioned industry changed the wearing of fine stockings from a "Sunday-best" luxury into an every-day necessity. Depression or no depression, the American girl won't "economize" on stockings . . . She wears the best she can afford and buys as many pairs as she needs—creating a year round market that can be predetermined with as much accuracy as any other staple commodity.

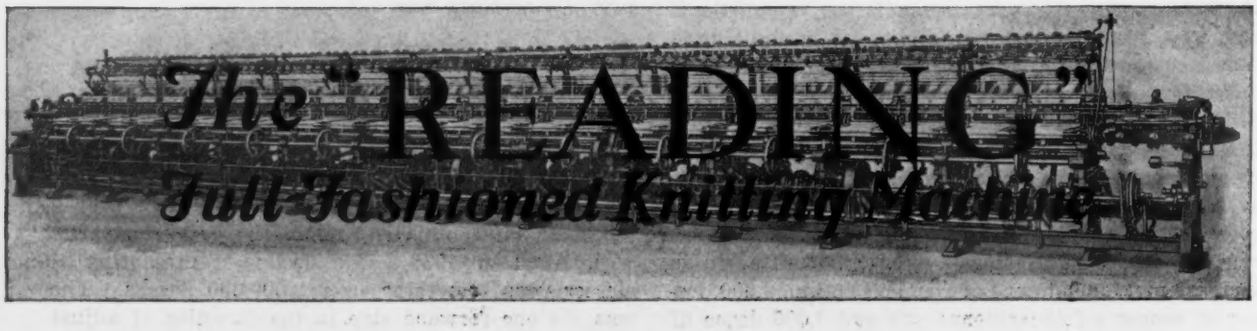
Even today every full-fashioned hosiery mill can find an outlet for the class of goods it is equipped to make; but, the bulk of the *preferred business* is enjoyed by those mills which met the new order of things with *modern* equipment—producing top price merchandise at the lowest possible manufacturing costs.

Let us show you in actual dollars and cents how the profits from modern machines compare with those from obsolete equipment.

**TEXTILE MACHINE WORKS**

READING, PENNA.

▼



ing stocks to shipments.

Stocks were apparently reduced by slightly more than 17 per cent from the holdings by mills in the previous April. This is viewed as the more encouraging from the fact there was a trifling gain in number of dozens knitted. This showing on the wrong side was, however, more than offset by increases in shipments and orders booked during the month.

An amazing disclosure which in the minds of many students of the situation doubtless supplies a hint that production still is excessive, was the striking falling off in unfilled orders, amounting to approximately 35.8 per cent. The indicated more drastic recession in unfilled orders was in women's full-fashioned, to 835,294 dozens from 1,500,550 in April, 1930. Seamless for women also declined sharply as to unfilled orders but still more sharply in matter of stocks on hand. Infants' hose made a rather poor statistical showing by comparison, except in matter of dozens produced, output falling off by more than 60 per cent.

## See Too Many Mills Competing for Healthy Cotton Underwear Markets.

COTTON UNDERWEAR is fairly priced by manufacturers, it is commented by some of the more important jobbers, and it is easily possible to obtain a shading of established quotations which are assumed to represent an arbitrary level. Yet these same jobbers, along with most of the distributors, have placed orders for fall amounting to little more than good size sample lots, and some have not bought a single dozen. This is deduced from the casual statements of both manufacturers and buyers.

Manufacturers are much in need of business and they are and have been trying to get enough orders to run their plants. Some are idle and some operating less than three days a week. Salesmen have been scouring the jobbing trade, it is stated by manufacturers discussing the unparallelled situation, but with little success, and buyers say that the road men and special salesmen follow in close succession, some bidding for orders with quotations so low as to reveal efforts of first hands to put idle underwear mill operatives at work, as a first consideration.

This is, in brief, a word picture of mill conditions in the great Mohawk Valley as they are painted by one or two mill executives and sales representatives along Broadway and the New York trading centers generally. The background for it appears to be nothing more or less than too many mills engaged in the manufacture of men's cotton heavy-weight underwear. That prices as they stand in the lists of leading mills are not to be blamed for the delay in placing fall orders is indicated in the fact that manufacturers in the principal production centers, North and South, seem to be in absolute accord on the question of value, and, therefore, it is admitted by buyers, quotations are relatively low since mills in the sections where operating cost is in their favor are admittedly not attempting to make use of that disparity in bidding for orders—with one explanation in mind, too much potential production.

"Manufacturers themselves cannot be ignorant of

THE quickest and most economical way to get into production on new merchandise, is to send for the Brinton representative. Brinton makes circular Knitting machines of all kinds, for every purpose. Brinton engineers will help you select the precise Knitting machine you need — or will make it for you if necessary.

If one of the many types of Brinton Rib Knitting Machines or Open-top Jersey Knitting Machines, in all diameters, doesn't exactly suit your purpose — turn the Brinton staff of engineers, and the Brinton experimental department loose on your problem.

You'll get action — results — the machine you want.

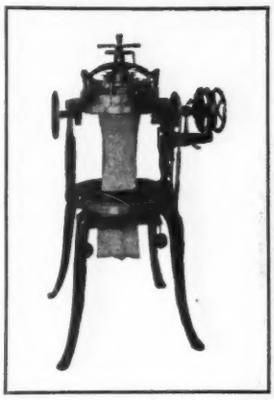
Ribbers — of every type.

Jersey Machines — Plain and Fancy stitches.

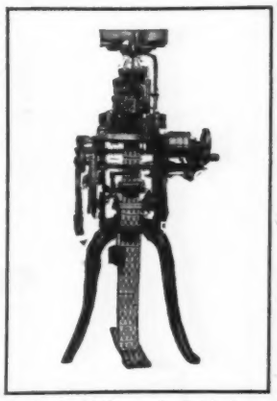
Rib body machines for underwear and bathing suits.

Sweater machines — Rib and Jersey Types.

Special Knitting Machines from ¼" to 36".



*Plain Rib Body Machine*



*Trick Wheel Ribber*

**H. BRINTON COMPANY**
3700 Kensington Avenue
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*New York Office:* 366 Broadway

BRINTON (CIRCULAR KNITTING MACHINES)
of EVERY Kind for EVERY Purpose

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James Building
CHATTANOOGA, TENN.

52 Chauncy St.
BOSTON, MASS.

HAMILTON, CANADA

LOS ANGELES

*Mills*

**CHESTER, PA.** **BELMONT, N. C.**

# ABERFOYLE MANUFACTURING COMPANY

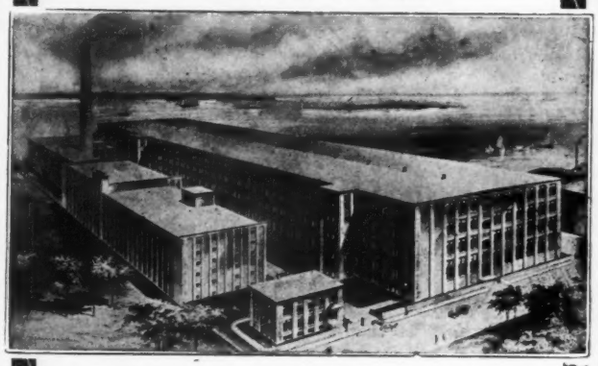
REPRESENTATIVES IN ALL THE PRINCIPAL COUNTRIES OF THE WORLD

IN CONFORMITY with a prevailing notion in the knit goods trade that changes in merchandising are certain to play no less a part in meeting new conditions than is styling, is the departure of the Berger Hosiery Stores, Inc., a Philadelphia chain of nine exclusive women's hosiery shops, from dependence of window displays for the advertising effect. The stores were established 10 years ago, and never had used newspaper advertising until June, when they began occupying liberal display space for exploiting "Veil weight chiffons thinner than sheer," for one dollar a pair. That, after all these years, Bergers' should resort to newspaper advertising is the more significant from the fact that the company's window dressing always attracted widespread attention as being unique, artistic and invariably apropos the occasion.

the fact too many of them are offering men's heavyweight cotton underwear," said an observant producer of lines not so seriously affected by competition as are men's cottons. He names two groups of mills, one of which is confined to the South, the other an almost exclusively New York State body. The two comprise around ten or twelve mills. "One-half the number of the plants comprised in the two groups could, by operating six months in a year, produce enough heavyweight underwear to meet every demand," was the assertion of the operator quoted as to excess potential production. "Three of the aggregate, operating steadily all year, could produce all the heavy-weights that the consuming public would absorb. Most of us forget," he went on, "that increasingly less heavies for men are being consumed each year—we are now at the lowest stage of consumption in any year I can recall in my thirty years of active experience in underwear distribution. I think we will use less next year than this year's consumption will amount to. Production is not decreasing in step with consumption. I have reasons for believing several of the stronger manufacturers know all about this and want to discontinue making underwear, but hold on in the belief some of their competitors are feeling the same way and thus it becomes a question of who will be first to throw up the sponge."

Buyers have said it is not necessary to go to mills or mill agents to place orders; that salesmen spare them this trouble and name as attractive terms as if buyers went into the open market with their bids. Several in this class who may be said to represent the sentiment existing among jobbers at large, say they have placed no orders for heavies, but doubtless will have to act during July. "I can realize," said one, "that by putting off much longer it might become necessary to rush the mills later and cause a jam which would leave some distributors short of goods in the fall. While I am taking the chance of getting what goods I will want, I certainly will be doing some buying around the first of August. If others come into the market in force before that time, I suppose I would follow. You see, everybody is watching the other fellow. One big buyer could give the winter underwear market a big boost in a jiffy. I believe that if manufacturers were to announce a policy of severe curtailment and stick to it, regardless, buyers would be quicker to act."


Quissett Mill
New Bedford, Mass.



COTTON YARNS

Begin with Quality
to
End with Quality

IN the textile field, as well as in most other industries, it pays in the long run to use only quality materials in the manufacture of products.

Take yarn for instance. Any weaver or knitter who has shopped around on a price basis has come back to his former quality brand. He found from experience that it is more economical in the end to specify quality yarn. It invariably means more satisfaction, more business, more profits.

Quissett Yarns are made in all counts and put up in many packages—but there is only one quality—the BEST for each type of product.

QUISSETT MEANS QUALITY

Wm. M. Butler, Pres.
Edward H. Cook, Treas. Thomas F. Glennon, Agent

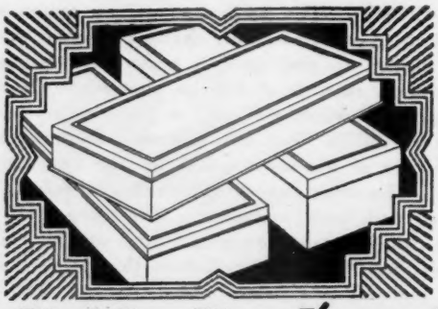
For
Better
Results
COOPER

QUALITY

High-Speed Latch
Spring Beard

KNITTING
NEEDLES

CHARLES COOPER CO. INC.
BENNINGTON VERMONT, U. S. A.
G. W. Morton, Southern Representative
1903 Friendly Rd., Greensboro, N. C.



"Individualized" paper boxes
for all TEXTILE PRODUCTS

Old Dominion paper boxes are distinctly different from any boxes you have ever used. In them you get that certain "individuality" that makes them stand out above all others. Especially made to fit your products and printed in any color combination with your trade-mark or special design. Our five centrally located Southern plants can give you a quick service and low freight rates. Write our nearest plant for samples and quotations.

OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C. Charlotte, N. C.

quality OLD DOMINION Paper Boxes

SILK HOSIERY FINISHES
*BROSCO* DULL FINISH-FINISHING COMPOUND S. P.
*BROSCO* SCROOP OIL
Can be used alone or in conjunction with one another to produce any desired feel and finish.
Does not shrink or tighten up the fabrics.

SCHOLLER BROTHERS, INC.
Amber & Westmoreland Streets
Philadelphia, Penna. Since 1907

SCHOLLER BROTHERS, LTD.
In Canada St. Catharines, Ontario Since 1927

Sewing
Operations
are done better, faster and more economically on Union Specials.

Union Special Machine Co.
400 N. Franklin St., Chicago, Ill.

CROWN
BRAND RAYON YARN

The Crown is your buying-guide to good rayon.

More than 30 different varieties to help you with all-rayon or rayon-cotton innovations.

THE VISCOSE COMPANY
200 Madison Avenue New York City

## Activity Making a Late Start in Knitted Outerwear for Fall.

BELATED ACTIVITY in the markets for men's, boys' and women's sweaters has made its appearance, the jobbing trade being about three months late with initial orders for fall. To the surprise of most knitted outerwear interests, there is developing a reasonable amount of business in shaker knit coats, which some weeks ago looked to many persons in the trade as a virtually abandoned item. They are in conservative output, but already some of the retailers are buying, very cautiously, of course. Boys' sweaters are promising of easily maintaining their popularity of the preceding year, and it should be not surprising if there be wider distribution.

The earlier orders thus far have been largely for women's light worsted zephyr sweaters. Since women are taking to coats more generally, it is the thought of some of the leading specialty shop buyers that use of sweaters will be somewhat affected adversely. But what now seems a likely falling off in this item appears to be more than offset by an increasing sale of knitted suits; and this is accompanied by a revival of interest in hand knitting.

Recently there has been a considerable demand for women to hand knit jackets in their homes, these to be worn with machine knit skirts. The latter are the more readily fashioned to please the exacting young woman in matter of form fit. But when it comes to the jacket—well, it is claimed by the hand knit advocates that there is no less difference between the hand and machine knit than between top grades of women's full-fashioned and hit-or-miss circular knit stockings. Anyhow, a Brooklyn knitted sportswear establishment was recently reported employing 75 women hand knitters on jackets intended to be a part of ensemble suits. A Philadelphia chain of three stores is going strong on machine knit skirts and hand knit jackets. Like all good things in woman's apparel lines, hand knitting may be expected to be less in demand, with passing seasons, than at present, a prediction which is supported by a disclosure in a line of bathing suits knitted on machines in imitation of very high price hand knit goods in this group of wearables for females.

According to several women who know whereof they speak on the subject of hand knit outerwear, worsted yarn for an average two-piece suit costs them $9 a pound. They can earn around $5 to $6 a day working full time knitting the jackets. Retailer price of knitted suits in some northern cities appears to be easily 100 per cent over what the store pays, and knitted suits sell for $60 and as much more as the purse of the store's customer will stand. Some few hand knit bathing suits were sold by a few exclusive shops for as high as $40 a suit, which, considering the size of the affair, is declared by some to be quite enough.

The bathing suit industry this year pulled through a trying season with much success in matter of volume, since jobbers were almost three months behind time with their first orders and did most of their buying so late that it was with difficulty that mills could complete deliveries in a manner satisfactory to distributors.

BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

JOSEPH T. PEARSON & SON CO.
*Manufacturers*
Kensington and E. Boston Avenues
PHILADELPHIA, PENNA.

Use
FARBESOL
*for finishing all grades of silk, rayon and cotton fabrics*

FARBESOL is a specially sulphonated olive oil (patent applied for) which eliminates odor and imparts an unusual degree of softness and body to the goods.

NEUTRASOL PRODUCTS CORPORATION
41 Park Row New York City
Southern Representative:
L. M. Bowes, Greenville, S. Carolina

# The YARN MARKET

**Philadelphia, June 18, 1931.**

THE DIPS and bulges in the June raw cotton markets neither depressed nor improved prices of either carded or combed yarns in the Philadelphia area. There has been a fair amount of peddling from stocks, at a half-cent a pound over the list, and for reputed high grade, some few dealers were able to exact a cent more than the ruling inside quotations.

Dealers found during the period of cotton fluctuations, when it appeared the price for spot was heading to eight cents, that they could sell yarn when manufacturers wanted it, and then only. Sellers willing to shade, split commissions or sacrifice commissions, were known to be writing business in materially larger lots than the rank and file of yarn merchants. Unless these merchants had a "pull" with one or more spinners, some factors thought, they were taking a direct loss on some of their sales. However, it was suggested, they helped to swell the modest volume of business for the time and, possibly, relieve some spinner having burdensome stocks.

Distributors of yarns who buy and sell say they find it difficult to locate spinners willing to make special prices for enabling them to meet the offers of direct representatives of mills. The latter are said to be moving some few quantity lots, while the strictly speaking yarn merchants must depend for a margin of profit upon having ready-to-deliver yarns. They are having a day to day spot business that is not in sufficient volume to compensate for the soliciting of orders—"We are not selling contracts," said a leading distributor, "and just now would not care to do so."

Dealers maintain a cheerful exterior notwithstanding market dullness and the fact that they had sold large quantities of yarns that cannot be delivered, for the reasons the buyers are not supplying shipping details. A representative house relates that its customers are withholding specifications on more than a quarter of a million pounds of yarn, mostly carded, of course, and that their weekly detailing amounts to only around three to five per cent of their commitments. There have been, of course, some adjustments, and others are under way. But when once the market moves to a more nearly normal position there will remain unfilled contracts to plague some of the sellers.

A few houses in June had what might be described as an immature flurry in 20s/2 warps, and managed to dispose of small lots at 18½ cents. Buyers fixed an arbitrary price of a half-cent less, but it is understood none was able to find a dealer willing to accept 18. Hosiery yarns were sold for 22 cents for 26s single, and a cent more for 28s. These sales were of better than average grade and were not representative of what buyers generally were paying. Knitting yarns have been in relatively lighter demand than weaving numbers, so many of the heavy-weight underwear mills being idle or operating from one to two days a week.

While the Philadelphia yarn trade apparently looks for little movement of yarn until well toward the end of July, more of the dealers are offering stouter resistance to efforts of buyers to establish lower prices. There seems a more general commitment to the theory that yarns already have discounted declines in cotton and that it is time spinners and dealers maintain a stiffer attitude toward a reasonable parity for cotton and yarn.

Published Philadelphia quotations on June 16 follow:

**Single Skeins**

| | | | |
|---|---|---|---|
| 4s to 8s | 15½ | 10s | 16 |
| 12s | 16½ | 14s | 17 |
| 16s | 17½ | 20s | 19 |
| 24s | 20½ | 26s | 21½ |
| 30s | 22½ | | |

**Single Warps**

| | | | |
|---|---|---|---|
| 10s | 16½ | 12s | 17 |
| 14s | 17½ | 16s | 18 |
| 20s | 18½ | 26s | 22 |
| 30s | 23 | | |

**Two-Ply Skeins**

| | | | |
|---|---|---|---|
| 8s | 16 | 10s | 16½ |
| 12s | 17 | 14s | 17½ |
| 16s | 18 | 20s | 18 @18½ |
| 24s | 21 | 26s | 22 |
| 30s | 23 | 40s | 30 @31 |

**Two-Ply Warps**

| | | | |
|---|---|---|---|
| 10s | 17 | 12s | 17½ |
| 14s | 18 | 16s | 18½ |
| 20s | 18½ | 24s | 21½ |
| 26s | 22½ | 30s | 23½ @24 |
| 40s | 31 @32 | | |

**Frame Spun Carded Yarn on Cones**

| | | | |
|---|---|---|---|
| 8s | 15½ | 10s | 16 |
| 12s | 16½ | 14s | 17 |
| 16s | 17½ | 18s | 18 |
| 20s | 18½ | 22s | 19½ |
| 24s | 21 | 26s | 22 |
| 30s | 23 | 40s | 30 @31 |
| 30s dbl. carded | | | 27½ |
| 30s tying in | | | 23 |

**Carpet Yarns**

| | |
|---|---|
| 8s and 9s white warp twist | 18 |
| 8s tinged tubes | 16½ |
| 8s part waste | 15 |

**Two-Ply Combed Peeler Skeins and Warps**

| | |
|---|---|
| 8s to 16s | 29½ @30½ |
| 20s | 30½ @32½ |
| 24s | 33½ @34½ |
| 30s | 34½ @36½ |
| 40s | 37½ @38½ |
| 50s | 43½ @44½ |
| 60s | 48½ @49½ |
| 70s | 59½ @60½ |
| 80s | 70½ @72½ |

**Single Combed Peeler Yarns on Cones**

| | | | |
|---|---|---|---|
| 18s | 27 | | |
| 24s | 31 | @32 | |
| 30s | 34 | @35 | |
| 36s | 36 | @37 | |
| 38s | 37 | @38 | |
| 40s | 38 | @39 | |
| 50s | 43 | @44 | |
| 60s | 48 | @49 | |
| 70s | 60 | @61 | |
| 80s | 70 | @73 | |

**Mule Spun**

**Carded Yarn on Cones**

| | |
|---|---|
| 10s | 21½ |
| 12s | 22 |
| 14s | 22½ |
| 16s | 23 |
| 18s | 23½ |
| 20s | 24 |
| 24s | 26½ |
| 26s | 27½ |
| 30s | 28½ |
| 40s | 36 |

**Combed Peeler Yarn on Cones**

| | |
|---|---|
| 10s | 29 |
| 12s | 30 |
| 14s | 31 |
| 16s | 32 |
| 18s | 33 |
| 20s | 35 |
| 22s | 36 |
| 26s | 37 |
| 28s | 38 |
| 30s | 39 |
| 36s | 42 |
| 38s | 44 |
| 40s | 45 |

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REPORT is current in Philadelphia that the full fashioned equipment of the Triple-Wear Hosiery Mill, that city, will be moved from the city and distributed among mills in which Harold Lichten, the president, is financially interested, one in Virginia. Mr. Lichten declines to shed light on the reported intended removal.